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The United States Miller

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DOING UP THE BEARS IN RHYME.

NOTE BY THE AUTHOR.—An advance in wheat is nearly an impossibility. All reports favoring such are untrue, and are not to be believed for an instant.

If you hear from the seaboard a miller 's bought wheat
To make into flour for people to eat:
If you hear an exporter a boat-load has bought—
Except to fill shorts—Oh! Credit it not.

If you hear from the country by mail or by wire,
Set down your informant a crank or a liar—
So, tell him at once, let your answer be curt,
If he dare to assert winter wheat may be hurt.

If you hear that in Europe the weather has been such
As seldom 's been known, and the fear is that much
Of the grain crop is damaged, thus causing alarm—
Don't worry, they'll tell you, frost never does harm.

If you hear that from Russia there comes the report,
Wheat being so low, farmers now will resort
To new modes of farming, and other grains try—
It's the veriest bosh, rest assured, but a lie.

If you hear from Calcutta, the vale of the Ganges,
That wheat has been damaged by rain on the ranges,
"Tis not true" from Kurachee, the vale of the Indus
Must be cabled forthwith by reliable Hindoos.

If you hear from our Northwest the farmers all sold
The bulk of their crop and but little now hold—
Have someone forthwith, if you're not in the humor
Brand the statement at once "unreliable rumor."

If you dare to suggest that Europe may need
A pound of our grain for food or for feed—
Expect to be dubbed a crank or a fool,
Synonymous terms as you know for a 'bull."

The "bears" have made money—look at R. J. and C.—
And also their 'tailers," say A. B. and Z.:
But I just want to see the farmers one day
To the price of their grain having something to say.

Then the "bears" and their cubs, the great and the small,
For once in their lives for mercy would bawl;
And the gains from short sales they've been making for years,
Would be forced from their grasp in spite of their tears.

McD. L.

OUR UNJUST TARIFF.

BY J. C. BATES, OF CHICAGO.

That my statements of fact and methods of presenting them are unsatisfactory to Mr. Hinton, of the "N. W. Tariff Bureau" and his more able coadjutor, the *Milling World*, is not surprising. They could not be otherwise.

Had I been the paid agent of a Free Trade organization, what changes would have been rung on that circumstance, together with the customary mention of "British gold."

Does Mr. Hinton derive pecuniary benefit from any tariff organization? His only reply is to show temper and, metaphorically, throw dirt. Readers of the UNITED STATES MILLER can form their own conclusions. For my own part in this discussion, my efforts are wholly disinterested save what interest I have in common with the public as a consumer.

Over thirty years' experience in exporting and importing many kinds of merchandise, afford me a practical knowledge of tariff matters, as well as insight into the operations of the tariff itself. While it brazenly proclaims to protect our manufactures, trade and commerce, that tariff severely cripples all these industries. Look, for instance, at commerce and navigation. The earnings of vessels engaged in our foreign commerce now amount to two hundred million dollars annually, nearly, all of which goes to the owners of foreign shipping. American ocean tonnage was driven out of the foreign trade by the tariff, and that tariff effectually prevents these United States to-day from asserting supremacy upon the seas. The derivation of the word "Tariff" is said to be from Tariffa, Spain, where the Moors in the days of their power collected customs duties after a manner now in vogue in China, where custom-houses are appropriately styled "Squeeze Stations." The plunder thus obtained was originally for revenue. Taxes on imports, however, continue to bear far heavier on the poor than upon the rich, and for this reason: They are taxes not upon what people have, but what they use. The rich need not pay more than the laborer with his scanty earnings is compelled to pay.

It must be apparent to any who have studied this question, that the heavier taxes are upon the cheaper articles, instead of the expensive articles, used by the rich. For instance, the tax on potatoes is 15 cents per bushel, or 50 to 60 per cent., while that on diamonds is but 10 per cent.!

Custom duties are collected in such an insidious manner that the consumer, who finally pays that duty, with all the added costs and profits, is not aware to what extent he has been plucked. But what a howl there would be throughout the country if customs officers demanded at every door, in a direct manner, the same duty of 50 to 60 per cent. And yet, wherein the difference to the consumer who pays it? The principal sufferers from that tax—the great mass of consumers—have been led to believe that they were actually being benefitted in being thus plundered. As it took a long time to do away with the practice of bleeding a patient for every ill, so it has required time to fix the attention of consumers to the fact that they have not only been bled needlessly, but to their own hurt.

Import taxes, interest many private interests in their behalf. Let a movement be made to repeal any tax and a persistent lobby hounds the congressman to leave the tax on that one item undisturbed.

Again, every sort of extravagant expenditure of public money has been resorted to by private interests for getting money out of the treasury that there might be some excuse for keeping the tariff where it is.

It will be remembered that certain industries, which many years ago first timidly sought the assistance of the government, styled themselves "infant industries," and wanted just sufficient maternal assistance to enable them to stand alone. One infant, however, followed another until about every producer and manufacturer in the country got to be an infant in this nursery where for half a century nearly, they have been holding on to the government teat as theirs by right and denouncing all who questioned their claim. In proof of this, which of our protected industries are any less clamorous for protection, than they were forty years or so ago?

Is this nation to be forever an eleemosynary institution for the few, at the expense of the many?

That large and much neglected class of consumers, who have so long had to pay for the government pap fed to hoary-headed "infants," now seek a recognition of their rights. They being by far the greatest number, surely beneficient laws should confer the greatest good on the greatest number.

But if it be absolutely necessary to sustain certain industries by bounty, why not instead of present method, pension them and levy a direct tax for that puapose? To such a proposition the whole crowd of "infants" would howl forth: "Could any proposition be more absurd!" And yet this government now pensions certain industries for whose benefit it levies an indirect tax. It is now paying bounties in drawbacks on a number of articles exported, including refined sugars, far in excess of duties received. In return for which favor Louisana sugar interests and eastern sugar refiners have been kicking against the Hawaiian reciprocity treaty, which is giving the Pacific coast cheap sugar and a large amount of trade, 92 per cent. of Hawaiian trade being done with the United States, and 95 per cent. in American vessels. According to Hawaiian statistics in nine years of the treaty, goods amounting to $23,600,000, have been imported from the United States. Sugar interests will kick in vain against such showing. It is commercial freedom which breeds commercial enterprise,

opens new avenues of trade and makes increased business for our vessel docks, warehouses, manufactories and labor. But if there is one thing more than another which private interests benefitted by the existing tariff despise and leave no stone unturned to defeat, it is commercial treaties. And why? Because they, in common with Hon. W. D. Kelly, believe such treaties are but the thin end of the wedge which is to undo them. The great milling and agricultural interests of the United States, however, have every reason to favor such treaties. The failure to negotiate such, leaves those interests at the present time almost wholly dependent upon the liberality of England for any considerable market in Europe. High tariff having shut American wheat entirely out of France, and almost entirely out of Germany, while in 1885, Great Britain took of our flour and wheat 39,800,000 cwt. And now as to the Laborer, at whose elbow we are told our tariff stands "to help him to better wages, to a more independent position etc."

Did it ever occur to the reader that under the highest tariff the country had ever known, the condition of the laborer is most unsatisfactory?

The laborer having suffered under one high tariff, is one still higher likely to work a cure for him?

In view of the fact that there has been the least employment and most discontent, would not the condition of the patient seem to demand some other remedy? That certainly, in the light of experience, would be the most natural conclusion, for the golden age of the laborer in these United States—the period of the most employment and least discontent—was from 1847 to 1855, under the liberal tariff of 1846, a tariff so generally satisfactory as to lead to a further lowering afterwards. The attempted refutation of my former statement, that "the tariff from 1846—60, was generally satisfactory" is confronted by the fact of a general opposition, especially on the part of New England manufacturers, when the Morrill tariff was proposed. The Morrill tariff was not the tariff of 1864, as Mr. Hinton would give the reader to understand. The latter, a war measure, a temporary expedient, after nearly a quarter of a century of peace, is practically still in operation, and still gnawing at the vitals of the great industries of this American people.

The panic of 1857, is cited as unanswerable proof of the deplorable effects of a low tariff. Seeing that, a panic is just what its name implies, a senseless scare, not unlike a stampede among cattle, it is a senseless argument to advance. As well might I point to the great fires in Boston and Chicago, as evidence against a high tariff.

Mr. Hinton appears to be a man of the past, a veritable Rip Van Winkle, in tariff matters. If there be a more hidebound old blue-bottle protectionist anywhere, one would expect to find him in Philadelphia. And yet the following is a lecture which a protection organ there reads to just such men as now represent at Milwaukee, the "North Western Tariff Bureau."

Philadelphia Times (*Protective Tariff*).

"The suicidal policy of the Republicans in refusing to take hold of tariff revision as they solemnly promised the country in their last national platform will materially strengthen Morrison's cause. They could and should come to the front and revise the tariff in the interest of general industry and natural economy, as their plighted faith to the nation, demands of them, and, if there shall be either disaster or disturbance to business circles by the tariff agitation that both parties invited in their platforms, the Republicans will be justly responsible to the country for their violated pledges. The Republicans could make a just tariff now by abandoning the monopoly features of protection that can be no longer tolerated, and if they fail in their duty they must answer for the needless agitation and uncertainty of the future."

Sensible high tariff men seeing the cyclone coming are preparing to get down off their high fence in a hurry. They see that the only way to stop tariff agitation is to reduce taxation. But men of the past, whose interests are still promoted by the tariff, talk as if they expected to maintain that tariff forever at an average of sixty per cent. above the rate of 1861.

By preventing importation they have for years been enabled to limit production. In reference to this method as applied to coal (and I do just enjoy quoting a Pennsylvania editor), the *Philadelphia Record* says:

"The deliberate announcement of the coal "combination, that the price of coal will be "raised by progressive jumps, $1.10 per ton, "is as cool proceeding as the demand of the "highway-man for the purse of the passer-"by. The highway-man enforces his request "with a cocked pistol; the coal companies "cock their pistol at the consumer by limiting "the production."

The effort of my opponent to make a high tariff point in reference to the 200,000 tons of railroad iron dumped here in 1849, by England, at $40 per ton, closing up our iron mills, is a desperate one. Seeing that there are only 11 or 12 mills in this country to day making rails, after a quarter of a century of prohibitory tariff, and that the production of steel rails was less in 1885, than in any years since 1880, one can but smile at such reference, especially as the capacity of even these few mills is far beyond any demand likely to arise in the home market. In absence of any chance at foreign markets, these few mills, in common with other subsidized interests, limit their production. My early home was in Illinois before the advent of railways. My father's log cabin stood in a wilderness of prarie, over which deer bounded freely by day, and wolves prowled and howled by night. The farmer in those days could barely get a picayune a bushel for corn after hauling it a long distance, and but very little more for wheat. To-day every foot of that great prairie is under profitable cultivation by thrifty farmers, who not longer live in log-cabins, but are surrounded by all the comforts and conveniences of modern life, and able to obtain at their own doors, nearly Chicago quotations for their grain and farm products. Why? Because no small part of this thrift and improvement can be traced to the cheap railroad iron dumped here from England in 1849, at $40 per ton. It is enough to know that millions of people were benefitted thereby. To the railroad system, steam and electricity, and the vast agricultural and mineral resources of this country, are due mainly whatever degree of prosperity this country at present enjoys. With resources a thousand times superior to those of any other nation, our vicious tariff policy only has prevented the United States from being perpetually prosperous. To abandon that policy will end combination to prodnce a scarcity of articles in general use to enhance prices.

Our late minister to England, Mr. Lowell, sounded the key note of the future in store for the United States, when he said in London:

"The moment America forsakes her protec-"tive policy, England will find her most ac-"tive and formidable competition in the "World's markets that she has ever met."

That time will rid our manufacturers and commerce from the fetters, which now bind them. Pauper industries, supported by the toils of others, may, in some instances, suffer, but upon the entire country the effect will be most healthy and stimulating and cause an awakening and developing of industry such as never before witnessed.

Mr. Hinton, on quoting Jos. Medill, Sept. 25, 1883, in reference to tariff on Wool and Woolens was perhaps a little too previous since by so doing, he compels me to quote Jos. Medill in the *Chicago Tribune*, on the same subject, under the later date of April 15, 1886, which quotation will in itself, I trust be sufficiently convincing as to the correctness of my earlier statement:

"Wool-growing, even in Ohio, is simply an "incident of ordinary farming, sheep being "used to keep down weeds and eat grass in "the fence corners. Putting wool on the free "list will cause a great cry in certain hilly, "sheep-growing parts of Ohio, but very little "if any change in election returns.

Besides it is by no means clear that a removal of the duty would affect the price of the wool produced in Ohio. If all kinds of foreign wools could be brought into this country free, it would enormously stimulate the manufacture of woolen goods and increase the demands for domestic wools to mix with the foreign article in producing varieties of cloth. The manufacture in this country is now practically restricted to the use of domestic wools, and the finer cloths produced by mixing different qualities are imported, chiefly from England, which enjoys free wool. It is entirely reasonable to expect that if the woolen factories of this country were put on the same footing as those in England, and permitted to use all kinds and combinations of raw material, the business would so increase that the demand for the home product would be as great as it is at present, and perhaps greater. Woolen goods valued at $40,000,000 were imported into this country last year, and the largest part of this manufacture might just as well be conducted in the United States, if all grades of wools were admitted free of duty. If wool were put on the free list it would not be surprising if the result would be an increase in the price of domestic wools, which would then be in great demand for mixing with foreign wools.

But even if American wool would be somewhat cheapened by taking off the duty, there is no reason why the interest of a handful of wool-growers in Ohio and Western Virginia should be preferred to that of the 60,000,000 people who buy woolen goods. Nine farmers out of ten are not producers of wool, but all farmers buy woolen goods. * * * * If the proposition to put wool on the free list could be submitted to a popular vote it would no doubt be carried by a majority of millions of votes, and perhaps even then the wool-growers would learn in a few years that they made a mistake in taking the negative. Wool should be one of the first articles added to the free list. The present duty on wool is an unjust tax on every man, woman and child in the United States except a few thousand wool-growers, and it is at least doubtful whether its abolition would not be a benefit even to them.

And while I have my hand in I may as well further quote Joseph Medill in the *Tribune* under the date of April 30, 1886, in reference to Senator Frye, whom Mr. Hinton quoted so freely as an authority:

"The blunders of fact and reasoning perpetrated by Senator Frye in his recent speech in the Senate, are almost beyond comprehension. Senator Frye's arguments are as sophistical as his figures are absurd and contradictory.

"A protective duty which keeps European manufactures out of the United States is just that much protection to an English merchant in competing with an American in any neutral port. The protective theory is founded on non-intercourse with other nations. Frye's idea that the American people can tax themselves rich and extend foreign trade, while clinging to a theory which, whether correct or not, is based upon non-intercourse in commercial affairs, is a piece of humbuggery delusive and misleading as his distorted statistics."

I have charged over and over again that while "protectionists" advanced the theory that a high tariff was necessary for the protection of the American working man, they were practicing the importation of contract labor from Europe. It was mainly upon this point that the issue of this discussion hinged. And now comes Mr. Hinton and acknowledges the truth of the allegation, but says in extenuation "I am bitterly opposed to it." Just what difference it makes to the working man whether Mr. Hinton, individually, is for or against such importations is a matter of supreme indifference to the general public. It is the tariff law and not individual sentiment that operates on the laborers' ability to get money.

As for authority for my statement that the British miller did not desire protection, the following from the London *Miller* appeared in the UNITED STATES MILLER, of January 1886, page 90:

"If any body is, on protectionist lines, entitled to protection, it is the [British] miller; yet the vast majority of millers are found to be staunch free traders, and the industry which, according to protectionist showing, should be most depressed, is found cheerfully protesting its sound health and ability to stand by itself, without any artificial prop or support."

Still more convincing evidence could be produced, but the above from a representative organ of British millers should suffice.

Let us see; Mr. Hinton started in with the promise to his readers of "An exposure of his [my] sophistries, and a refutation of his [my] erroneous statements"!

But to resume. "Every labor organization in the country is opposed to lowering the tariff, without a single exception," says Mr. Hinton. Labor organizations, as the public just now is aware, at times do some very foolish things. We see the laborer in Pennsylvania one week bearing banners and transparencies laudatory of a high tariff, and the next in wild revolt against imported contract labor!

In the case of the alleged working man, another Englishman, by the way, before the Ways and Means Committee, it would be safe to hazard a guess that he was sent there from Pennsylvania in tariff interests at $5 per day and expenses, and carefully coached for the occasion.

Until the agent of the "N. W. Tariff Bureau" and *Milling World* are agreed as to whether England is free trade or high tariff, it is hardly worth while to discuss that question here. Mr. Hinton says that to say England is free trade is "such a foolish assertion" and one which no intelligent person would make, and directly himself quotes from the *Milling World* about "Free Trade England"! Funny people these "protectionists."

The matter of compensation paid to the American and English operative, respectively, seems to call for consideration here. About the chief stock in trade of high tariff people, their subsidized press and agents, is to grossly misrepresent.

Did it ever occur to the average American that labor might, possibly, be better paid in England to-day than in the United States? In the first place there being no direct tax there on necessities, these cost him much less than they cost his American competitor. But let us see which of the two receives the most wages *for performing the same amount of work.*

Manufacturers of textile fabrics who have been making statements as to cost of production, to the Ways and Means Committee, show wages earned by operatives in English mills are considerably less than earned by American operatives. In the absence of complete data, however, such comparison is of but little value. The principal reason why higher wages are paid in cotton and woolen mills here than elsewhere is, that our operatives are more skillful, energetic and constant than those employed in other establishments of a similar kind in any other country in the world. English operatives coming here are compelled to work harder than they ever did before in their lives. Thus, while an American operative frequently attends to eight looms, an English operative would consider himself hard pushed in the care of three or four looms. In manufactories where piece work is carried on—where operatives are paid for what they do—appropriate comparisons are rarely made. The *average* wages earned by the week are rarely given, though the facts could be readily obtained. Those in the business rarely care to exhibit to Congress, or to the public, the rate of wages paid in the two different countries for performing a specified amount of work. About the only analysis of the kind was made several years ago by a thoroughly informed English manufacturer, who, after careful study of our manufacturing system, and minute classification of costs, of production, figured out:

"That for weaving and printing cloth the "Fall River (Mass.) Mills paid 20 and 23 cents "for what would call for wage payment in "Blackburn and Stockport of 25 and 29 cents. "That when gauged by the amount of work "performed, the English operatives in those "two places were receiving 20 per cent. higher "pay than was given the operatives of the "Fall River Mills."

And in the past few years Englishmen have been governing themselves accordingly by transferring much capital and plant to this country. There have been many cases of such transfer of British capital to be employed here in manufactures and mining, the latest movement being that of British iron masters to Alabama, to avail themselves of the extraordinary facilities there for pig iron. Thus with rapidly increasing facilities for manufacturing, our manufacturers whether natives or foreigners, will be forced to seek new outlets for their surplus products. So that which ever way one turns he sees on every hand unmistakable signs that the days of high tariff in this conntry are numbered.

Reference has been made to the great mineral wealth of Alabama. Colorado, we know, has, since the war, turned out of her mines an amount nearly equal to the original national (war) debt.

Wonderful stories are told of the natural wealth of Wyoming Territory. There is said to be a mountain of solid hematite iron in the heart of the Territory, with 600 feet of it above the ground, more than a mile wide and over two miles in length; a bed of lignite coal big enough to light the world for centuries; eight lakes of solid soda, one of them over 600 acres in extent and not less than thirty feet in depth; and a petroleum basin which contains more oil than Pennsylvania and West Virginia combined.

While recent reports from Alaska sound like tales of far-off Cathay in the olden time.

The hand of the monopolist will soon be powerless to limit production and prevent importation. It cannot much longer hold the rising tide of public sentiment which everywhere throughout the length and breadth of the land is demanding to sell in the dearest and buy in the cheapest markets of the world. We are already past the young flood and shall soon witness the swell and force of the strong incoming current of the full flood tide itself!

PRESERVATION OF FLOUR.

Referring to a recent paragraph concerning the discovery and employment of a new process of preserving flour, being employed with great secrecy at Utrecht, Holland, a correspondent of the London *Miller* writes: "Before the year 1850 I happened to hold a friendly converse with A. Kersey, estate agent to Lord Trollemache, of Helmingham Hall, and as he was then advanced in life, what he alluded to probably took place about the beginning of the present century, and was no doubt kept a profound secret, just as at Utrecht, in Holland. Mr. Kersey said that a friend of his, many years before our conversation, always had flour for his customers 'in short water time,' when all his neighbors were without flour, and they could not imagine how he managed to do it. I said it could only be done by compressing the flour into a tight block, so that it could not stir and so become sour by fermentation. I said, is it not so? He said, 'I promised my friend never to tell, but you can try.' So in November I rammed an American flour barrel as full as I could with English flour, headed it up, and set it aside for 12 months, when it was perfectly fresh and as hard as a stone, just as I left it at first. I then told Mr. Kersey what I had done. He said, 'Yes, that was what my friend did. You have found out; I did not tell, as I promised not to. My friend had chests made, which he rammed full of flour in the winter, and supplied his customers with the flour in the summer; but he was very particular to fill the chests with pure flour, free from germ.' We hear very little of sour American flour, now the improved system of milling is adopted. My reason for saying 'that is the only way it could be done,' was that I read when a boy in the old *Mechanic's Magazine* that someone had pressed a brick mould as full of flour as he could, and placed it in a damp cellar for 12 months, where it remained perfectly sweet."

SPEAKING of the peculiar ideas which children sometimes have, reminds me of the recent experience of a Sunday school superintendent. He was speaking to nearly a hundred little girls and boys, and was telling them about the Christmas customs in different lands. Finally he asked the question:

"Now, children, tell me whose birthday is celebrated at Christmas?"

Instantly there was a chorus of "Santa Claus!"

SITUATION WANTED.

Short advertisements will be inserted under this head for One Dollar each insertion.

WANTED—A practical Oatmeal Miller, one who understands his business and is *willing* to attend to it. Can receive additional information by calling on, or addressing CHARLES D. DANA, 10 State St., Chicago, Ills.

PROPER SPEED OF ELEVATORS.

With the owners of many mills it is very desirable to know some of the rules which pertain to the arrangement of the machinery. Some mills are so isolated that it is inconvenient to procure expert millwrights for every little job, and many, as a matter of economy and of choice, would like to do their own repairs or refitting about the mill, or, if they could calculate correctly, could use ordinary mechanics readily available. The writer remembers that he took a great deal of pleasure in his first work of millwrighting, when he made the calculations and put three elevators and some spouting which greatly lightened the manual labor of the mill, and this was done when the mill was idle, and was thus a clear saving in expense of a hundred dollars for millwright work. There is nothing for which we are so much indebted to Oliver Evans as for the elevator, for it is that which has made milling enjoyable, because not so laborious, and has made a possibility of present perfected methods. By a judicious use of elevators the mill can be made in every way convenient and labor saving. Many old mills could be made to avoid much labor by the addition of one or more elevators. Instead of letting your bran and feed run on the floor to be scooped up by hand, elevate it to a bin, where you can draw it from a spout. Instead of running a long spout with not enough pitch, to feed middlings or low grade to a stone having to grind just as it runs, and it all the while bothering you about running, put up an elevator which will carry it up and drop it into a hopper just where you want it.

Elevators with as small as two-inch cups can be used, and rightly put up, there is no need of their requiring any expense for repairs in a generation, except for those handling grain. In the addition of an extra machine a new elevator is often required, and sometimes a machine stands waiting a long time for the coming of a millwright when the work might be done by the miller himself. It used to be thought that it was necessary for an elevator to have an incline in order to empty, and these inclined elevators can be seen in old mills, but that idea is exploded, and it would either be through a cranky mechanic, or some necessary condition, where any but an upright elevator would be put up now. The inclined empties at a slower speed than the upright-elevator, but the belt drags on one side and the cups on the other, thus causing wear and absorbing power. A faster speed, with lighter belt and buckets, and no dragging, is obtained by upright elevators. Properly constructed, elevators are light consumers of power, but they may, by a slight defect, absorb quite an amount. An all important point is the proper speed, so that there is a perfect discharge. To have material thrown down the back leg is to uselessly increase the power required, which would be quite an item in a number of elevators, and would deceive the miller as to the amount of material discharged, which, in the case of returns, or bolting stock, might affect the results. In the handling of middlings it would disintegrate them, and affect their purification.

There was once used a rule among millwrights to have the elevator travel a certain number of feet per minute. This is entirely wrong, because the discharge of the buckets at a proper tangent depends alone on the revolutions of the pulley; whereas, if it depended on the speed of the belt, the revolutions would vary according to the size of the pulley. Thirty-five revolutions per minute is the proper average speed of elevator pulleys on most kinds of material.

On soft material like millstone chop, returns, etc., thirty revolutions is best, while as high as forty is good for middlings and grain. Soft material will be carried farther around the pulley than grain, and more care must be exercised in arranging the discharge spout to have in low,—a few inches below the centre of the pulleys,—as such stock will not fly off like heavy, sharp material. The buckets that will best discharge soft stock have quite a drop to the front edge, and do not form a full quarter section of an oval, as in the case of the old-fashioned pattern. Of course they do not hold as much, but they are more easily cleaned, and more capacity should be provided for by increasing the number or width of buckets. Buckets can be put sixteen inches apart on twenty-inch pulleys, and twelve inches apart on sixteen-inch pulleys. Sixteen-inch pulleys are just as good as those of larger diameter, except where grain is elevated rapidly, in which case larger pulleys are necessary to give more lap and grip to the belt.

The diameter of elevator pulleys should be adapted to the distance apart of the joist, so as not to require any cutting of the joist for the trunks. Sometimes an elevator has to be put up so close to a beam that a very small pulley must be used, and we have seen a six-inch elevator pulley utilized in such cases. So small a pulley would have to be run faster, as the size of the trunk remains the same, and the stock has to be thrown a little farther in proportion to the size of the pulley. There is no necessity for the elevator trunks being so large as many make them. One inch deeper than the cup is as good as two or three, and saves unnecessary waste of material in the trunks. Elevators should be proportioned to their work.—*The Millers' Review.*

C. H. TOUAILLON, M. E., ON FRENCH MILLING.

On the 2d of March last, Mr. C. H. Touaillon, who has followed in the steps of his father, the late Mr. Charles Touaillon, and is now one of the best known flour mill engineers of France, read a paper before the Society of French Agriculturists on the present condition of French milling. Mr. Touaillon enunciated views to the full as conservative as those which were held by his father in regard to the new systems of milling. He urged that if French millers were not generally in a flourishing condition, the remedy should rather be sought in a higher duty on flour, calculated to completely exclude foreign flour from the home market, rather than in any wide reaching revolution of the prevailing system of French milling. He regards the present roller system as being quite unsuited to the French milling trade, seeing that the variety of grades of flour it is calculated to produce cannot be turned to good profit in a country like France, in which the quality of bread varies but little from the richer to the poorer class of consumers, as, arguing from a protectionist point of view, he sees another fatal objection to the use of the full roller system in France. This system, he maintains, has never been found to give good results except on hard wheat. Now, seeing that, as a rule France will only grow soft wheats, it is evident that the general introduction of the roller system into France would mean the virtual extinction of the wheat growing industry of that country. Moreover, in Mr. Touaillon's judgment, rollers, if used by themselves for the flouring of grain are only to apt to injure the glutinous and starchy elements in the wheat kernel, and to produce a flour which bakes a quick-drying loaf. He admitted, however, that rolls might be used to regrind the semolina produced by stones, although he would not allow that the rolls would give a better result than could be obtained from the best class of stones, and he called attention to the fact that, in his opinion, the rolls could only be worked by a more liberal expenditure of force. Proceeding to a more technical treatment of his subject, he said: "As to the centrifugal dressing machines which have been imported by foreign engineers because they are almost indispensable to finish the work of rolls, we cannot advise their use except where there is not sufficient room for the ordinary bolting reels. They (the centrifugals) are costly to keep in order, they take too much power, and they do not effect such a through classification of the products as our old bolting reels. Purifying, which had been neglected in many mills, has been much improved. The machines in use even a few years ago were not good. To-day the sieve purifiers made and used in France work well; they are not complicated, are easy to work, and their products are thoroughly well purified. There is now no difficulty in effecting this operation (purification), which is so essential a complement to the grinding. When all is done and said, so far as machinery is concerned, we have no need to envy either foreign millers or engineers. As for the former, we can show machines quite on a level with theirs; and with the latter our own mechanical engineers can compete on favorable terms, not less in respect to excellence of workmanship than of cheap price." Mr. Touaillon concluded by remarking: "But if we wish to profit by these advantages, we ought to make use of the tools at our hand, and not seek to make use of machinery, which to be worked with advantage would require the introduction into France of those hard wheats which are only grown on our soil in small quantity. We shall thus help to raise up our agriculture and its sister industries."

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THE Modern Miiler, of Moline, Ill., has removed to Kansas City, Mo., and has consolidated with the *South-western Miller*.

THE condition of the growing wheat crop in the principal grain-growing States is reported very good generally.

IT is gratifying to be able to state that at the present date, May 17, nearly all the disagreements on the labor question have been settled and that law and order have prevailed. Boycotting and intimidation may be considered things of the past in this country. The right of every one to work for any number of hours for whatsoever price he may contract, and the right of the employer to employ such persons as he chooses to work for him, are conceded by every liberty-loving, fair-minded citizen.

TYSON & BROS., an old established firm in the grain business in Baltimore, Md., failed May 13, and assigned to Henry A. Parr. The liabilities are placed at $200,000. No statement yet of assets. The firm has extensive connections in Europe, and does a heavy shipping business.

ITEMS FROM BEYOND THE SEAS.

In reviewing the state and prospects of the wheat and flour trade *The Miller* (London) says: "The Indian shipments during the past month (March) have been small from Calcutta, smaller even than expected at the fag end of the season, but from Karachi and Bombay perhaps a little larger. The new crop is said to be of fair to fine quality, better on the average than last year. But the diminution in the acreage does not seem to be denied, and an exportation of 3,000,000 quarters to the United Kingdom is now spoken of as the probable figure for the export season, May 1st 1886 to April 30th 1887. Australia and New Zealand appear to be needing practically all their own wheat. New Zealand has a good crop, but Australia's deficiency is said to have been under-estimated, so that importations from New Zealand will be required. The price of wheat in Australia has risen 2s to 4s per quarter since harvest, a very significant sign as to what is the result of early threshings. The extreme lowness of freights would tempt exports, if there was the grain to export, but from all we can hear it will be safest to eliminate Australia from present calculations."

FOREIGN ITEMS.

An International Exhibition of milling and baking machinery will be held at Amsterdam in August this year, opening on the 2d of Aug. and closing on the 15th. Foreign exhibitors are invited to take part in this exhibition, which is to be governed by the ordinary rules of such exhibitions. Prizes will be awarded in the shape of diplomas, and special money prizes will be given for the following: For the best complete bakery at work, 500 florins; for the second best 250 florins; for the best oven, not exceeding three meters in length, and two meters in width and height, 300 florins; for the second best 100 florins. There will be four classes in the milling section, viz., raw material; manufactured products; machines and details; and accessories. In the baking section there are four similar classes. Machinery to be exhibited must be in Amsterdam by July 31, before 4 p. m., and all expenses attending the exhibition are to be borne by the exhibitors. Power also must be provided by the exhibitors themselves. The tariff for space is as follows: 10 florins per square metre (a metre equals 39.38 inches) for a separate stand; 7fl 30 for a space along the walls; 5fl in the galleries; and 25fl 50 in the open air. All particulars are to be obtained of Mr. G. Brongers, the general commissioner, at No. 130, Warmoesstraat, Amsterdam, Holland.

FEDERATED IRON-WORKERS OF ENGLAND.—A widespread attempt is being made in England to federate the various trades unions in much the same manner as has been, or is sought to be, accomplished through the Knights of Labor in the United States. A cable dispatch states that it was proposed by some of the English leaders to join the American Knights of Labor. The opponents of the proposal combated the scheme because of the great distance which would separate the English workers from the executive head of the organization, and the consequent difficulty of obtaining advice in the event of a sudden strike or lockout. The Knights appointed two delegates to confer with the English representatives, and tried hard to effect an alliance, but failed, and "it has now been resolved to organize a separate federation" in England, "and to trust to future events for a closer connection with the Knights."

The Danish Government has lately enacted a law making important changes in her customs tariff, among which is one relating to maize and barley. These articles, when imported into the country for consumption have to pay an import duty of 75 öre per 100, lbs., and while they may be warehoused at a depot, the minimum quantity that can be warehoused or removed at a time is fixed at 2,500 lbs. corn meal and barley meal are to pay a duty of two crowns per 100 lbs. The new tariff will continue in force for four years from April 1, 1886.

ON and after May 2d, 1886, the Chicago, Milwaukee and St. Paul Railway will, in addition to its presents excellent through train service, place extra trains on its Short Line between Chicago, Milwaukee, St. Paul and Minneapolis, to be known as "Limited," which will make the run between Chicago and St. Paul in twelve hours and twenty minutes, and between Chicago and Minneapolis in twelve hours and fifty-five minutes. These trains will run daily, except Saturday, and the west bound train will leave Chicago at 7.30 p. m., Milwaukee at 10.05 p. m., and arrive at St. Paul at 7.55 a. m. and Minneapolis at 8.30 a. m. The east bound train will leave Minneapolis at 7.00 p. m., St. Paul at 7.35 p.

m. arriving at Milwaukee at 5.20 a. m. and Chicago 7.55 a. m., thus enabling passengers to get supper at starting point and breakfast at destination. These trains will be a great convenience for business men, commercial travelers and all other first-class passengers. Each train will be made up of Pullman's newest and best sleeping cars, with smoking compartments, elegant day coaches and baggage cars.

No extra passage fare will be charged, and for such as desire sleeping car accommodations the charge for bertos will be the same as heretofore. First-class tickets only (including book mileage tickets) will be accepted on the "Limited." For further details passengers are referred to the time-tables and other advertising matter of the Chicago Milwaukee & St. Paul Railway and to the Coupon Ticket Agents throughout America.

NEWS.

ASSIGNED.—B. C. Snyder, Poplar, O.

SOLD OUT.—Joseph Goaser, Viola, Oreg.

Peshtigo, Wis., wants a good flour mill.

SOLD OUT.—A. M. Dull, Charlotte, Tenn.

David Thompson of Deans, Ont. is dead.

SOLD OUT.—Orwell Simons, Payson, Utah.

ASSIGNED.—Alex. Cunningham, Augusta, O.

DISSOLVED.—L. Clark & Co., Westerville, Neb.

DISSOLVED.—Corson, Lasell & Wright, Lodi, Cal.

DISSOLVED.—Storris & Crandall, Springville, Utah.

DISSOLVED.—Hollander & Wehsner, Wautoma, Wis.

DISSOLVED.—Charron & Frere, Vercheres, Quebec.

BURNED OUT.—Ainslie & Gannett, Cohassett, Mass.

Robt. S. Jackson has sold his mill at Alaska, Mich.

BURNED.—Fouch & Newton's mill at Glawin, Mich.

CLOSED OUT.—Edward Parker, miller at Frederick, Md.

ASSIGNED.—Joseph Maphis, miller at Mt. Jackson' Va.

SOLD OUT.—Northwestern Mill Co., Tower City, Dak.

CLOSED OUT.—A Gardner & Son, at Taylorville, Utah.

DISSOLVED.—Johnson & Croft, millers at Moulton, Iowa.

SOLD OUT.—Chas. Hidden, of Chino, Cal., has sold his mill.

SOLD OUT.—J. R. Randall, miller, at Vernon Center, Minn.

D. Moore & Son have started their new mill at Oak Lake, Man.

DISSOLVED.—Stokes Bros. & Jennison, at Water' town, Dak.

DISSOLVED.—The Rifenburg Milling Co. at Charlevoix, Mich.

F. Roper, Ashland, Oreg., has sold his mill to Geo. B. Landers.

O. P. Jaycox succeeds Dion Keefe in the mill at Cove, Oreg.

James Howell, of Howell & Sons, Morrisville, Pa., died recently.

BURNED.—The Brown County Milling Co's mill, at Brownwood, Tex.

BURNED.—The Farmers' mill owned by R. H. Ross at Mt. Sterling, Ill.

J. T. Morris succeeds Wharton & Morris in the mill at Henderson, Mo.

L. O. Ried, miller, of Chattanooga, Tenn., is succeeded by Ried & Hackey.

At Carmel, Me, April 30, Laurey's steam mill was burned: Loss unknown.

Mr. Whitehouse, of Durand, Wis., will erect a large cooper shop at Duluth.

SOLD OUT.—J J. Reik, of Blissfield, Mich., has sold his mill to J. J. Kefuss.

DISSOLVED.—The milling firm of Chapman & Goodfellow, at Wroxeter, Ont.

Rogers Bros., millers at Bristol, Pa., have failed with heavy liabilities.

The milling firm of McFarland & Goucher, Uniontown, Mo., have dissolved.

Curtiss & Cowden, millers, of Rochester, Mich., have dissolved partnership.

Wallace Bros. & Wyatt have finished a $10,000 50-bbl roller mill at Duck Creek, Tex.

BURNED.—April 19th, the Willard mill at Hampshire, Ills. Loss $2,000, no insurance.

D. C Taylor & Co, of Trenton, Tenn., have let a contract to build a 50 bbl. roller mill.

The firm of Kell & Co., millers at Terrell, Tex., will hereafter be known as the Terrell Milling Co.

Kramer Bros. mill at Preston, Minn., was destroyed by fire April 28. Loss $25,000. Insurance $10,000.

The loss on R. H. Ross' mill at Mt. Sterling, Ill., recently burned, is estimated at $8,000. No insurance.

Good mills are offered for sale by Proebstel Bros. at Weston, Oreg. and David Gunning, at Sprague, W. T.

The Carrollton Roller Mill Co., Carrollton, Ills., has obtained license to incorporate with a capital stock of $15,000.

C. C. Shelton is putting in new machinery and otherwise increasing the capacity of his mill at Chattanooga, Tenn.

At Port Elgin, Ont,, April 30, J. & J. George's large flour mills were destroyed, and a number of other buildings badly damaged by fire. Loss, $20,000; insurance, $16,000, as follows: Commercial Union, $12,000; British American, $2,000; Royal Canadian, $2,000.

At Kansas City, Mo., April 30, the Advance elevator, Mintor Brothers, proprietors, was burned to the ground at midnight. The loss will reach $100,000. Forty thousand bushels of wheat and 17,000 bushels of corn were destroyed. Insurance on the building, $17,000; on the grain, unknown.

John Chapman, miller at Teeswater, Ont., has sold out, and Nixson, Howson & Co. of the same place have dissolved.

BURNED.—At North Thetford, Vt., April 27th, S. M. Ladd's steam grist and saw mill. Loss $3,000 to $5,000. no insurance.

J. A. Stanton's mill at Sauk Rapids, Minn., was recently destroyed by a cyclone. Loss estimated at $30,000 to $40,000.

The Mandan (Da.) Roller Mill Co. has been awarded a contract for supplying Fort Abraham Lincoln with 30,000 lbs. of flour.

Daniel McCuaig, of Muscotah, Ks., is planning to build a large roller mill, this year, if a certain proposed railroad is built.

Dion Keefe has sold his milling business at Cove, Ore., to Jaycox & Co.; Jos. Goaser, of Viola, same state, has also sold out.

License has been granted to the La Crosse Milling Co., Wis., for the manufacture of oatmeal, feed, etc. The capital stock is $50,000.

The mill of McGowen & Hubby at Waco, Tex., is to have rolls and other new machinery, increasing the capacity to 75 bbls. per day.

BURNED.—On April 20th fire destroyed the flour mill of Peebles, Foulds & Co., Cor. Race and Court streets, Cincinnati, O. Loss $50,000.

The Minneapolis mills contributed 25,000, and the St. Paul roller mill 10,000 pounds of flour to the sufferers by the cyclone in Minnesota, April 14.

H. C. Bowers, of the milling firm of Dillon, Bowers & Strock, Rock Falls, Ills., has retired from the firm, which will hereafter be known as Dillon & Strock.

The new railroad flour warehouses at Duluth are nearly completed, and are already well filled with flour from Minneapolis, Fergus Falls and other points.

W. J. Jennison has retired from the milling firm of Stokes Bros, & Jennison, Watertown, Dak., and is succeeded by Frank Stokes. The new style of firm name is Stokes Bros. Mr. Jennison in company with his brother, under the firm name of Jennison Bros., will operate the mill at Janesville, Minn.

BURNED.—April 7, at Quincy, Ill. The Gem City Mills, the largest flouring mills in the city. Total loss nearly $200,000. The buildings were owned by a stock company of Quincy men, and cost $125,000. Taylor Bros., the lessees, took possession last winter. They had 15,000 bushels of wheat and 1,000 barrels of flour in the elevator and warehouse. Their loss is about $30,000. The Nordyke & Marmon Co, of Indianapolis, had just refitted the mill on contract and the machinery had not been accepted. Their loss will be $30,000.

On the morning of Apr. 26 the flouring mill of Geo. Dates & Bro., Portage, Wis., was struck by lightning and burned with its contents in about two hours. It had in store about 500 bushels of wheat, and nearly the same amount in ground feed. The total loss is estimated at $8,500; no insurance. They had carried about $7,000 insurance for a number of years up to a year ago, when it was discontinued. They will be unable to replace the property destroyed.

The Cummer Engine Co., of Cleveland, O., have recently received orders for a 287 h. p. Cummer automatic engine for Wahl Bros., of Chicago, Ill, and a repeated order for a 215 h. p. engine from the Marshall roller mills, of Marshall, Mich. The Cummer Co. have also received orders for nine of their "Simplex" automatic engines within the past few weeks, six to go to Chicago, two to Milwaukee, and one for Messrs. Taylor & Boggis, of Cleveland, the powers ranging 50 horse and under; they have also received an order for two complete Hoisting Plants for Messrs. H. M. Benjamin & Co., of Milwaukee, Wis.; among the Cummer Engine Co's late shipments are a 50-ton refrigerating plant for the J. Walker Brewing Co., of Cincinnati, O., and a 215 h. p. engine for the Peninsular Car Co., of Detroit, Mich.; they report their sales for the Jonathan Mills Universal Flour Dresser constantly on the increase, having sold double as many since the last of January as for the corresponding period last year.

The following are among the many orders received by The Case Manufacturing Co. of Columbus, O., since our last issue: From Knedler Bros., Long Grove, Ills., for the necessary machinery for a roller corn meal mill on the Case system; from The Superlative Purifier Mfg. Co., Milwaukee, Wis., for one 5-reel scalping chest; from Moore & Dutcher, Douglas, Mich., for a full line of rolls, purifiers, centrifugals, scalping chests, etc., for a complete roller mill on the Case system; from McAllister, Wolsleagle & Co., Sterling, Ks., for a full line of rolls, scalpers, centrifugals, bolting reels, etc., for a full roller mill on the Case system; from J. B. Miller, & Co., Ashley, O., for the necessary machinery for a roller corn meal mill on the Case system; from W. E. Bolin, Circleville, O., for the necessary machinery for a roller corn meal mill on the Case system; from Hixon Bros. & Johnson, Granite Falls, Minn., for a complete plant of rolls, purifiers, centrifugals, scalpers, etc., for a full roller mill on the Case system; from Chatburn Bros., Albion, Idaho, for one No. 1 purifier; from Minnick & Strous, Huntington, Ind., for all necessary rolls, purifiers, centrifugals, bolting reels and other machinery for a full roller mill on the Case system; from Barnard & Leas Mfg. Co., Moline, Ills., for two No. 1 single purifiers to be shipped to Samuel Hickman, Claymount, Del.; from E. J. Sweet, Florence, Ks., for all the necessary rolls, purifiers, centrifugals, scalpers, etc., for a full roller mill on the Case system; from S. M. Canan, Richmond, O., for one centrifugal reel; from The A. L. Strang Co., Omaha, Neb., for all the necessary rolls, purifiers, scalping, and bolting reels for the mill they are building at Elwood, Neb., fourteen pairs of rolls with patent automatic feed will be used; from J. T. Burkett, Waterloo, Iowa, for two pairs of rolls with patent automatic feed; from A. L. Strang Co., Omaha, Neb., for all the necessary rolls, purifiers, scalping and bolting reels for the mill they are building for The Bazile Mill Co., Bazile, Neb.; from Dehner & Wuerple Mill Building Co., St. Louis, Mo., for four pairs of rolls with patent automatic feed; from W. O. Smith, Oakland, Ills., for all necessary machinery for a full roller mill on the Case system, using fourteen pairs of rolls; from Carter, Stewart & Co., Peoria, Ills, for all necessary material for a roller corn meal mill on the Case system; from London, England, for 16 pairs of rolls with patent automatic feed; from W. S. & M. Hoke, Parsons, Ks., for all necessary machinery for a roller corn meal mill on the Case system; from W. T. Pyne, Louisville, Ky., for ten pairs of rolls with patent automatic feed, to be placed in the mill of A. Bradley & Co., New Albany, Ind.; from L. Lindsey, Humboldt, Ks. for additional rolls; from William Hisey, West Branch, Mich., for six pairs rolls, one special purifier and three-reel scalping chest; from Heffner & Co., Circleville, O., for additional rolls for their corn meal mill.

GERMAN COMPETITION IN THE MILLING MACHINES.

The *Ironmonger* of April 3 has the following specially-contributed article on this subject:

In our issue of last week we directed attention to the German competition in steel castings. At the meeting of the Newcastle engineers, at which the matter was discussed, considerable difference of opinion prevailed as to the extent or the effect of the German competition in steel castings, but with regard to the phase of German competition to which the title of the present article refers, there is not room for two opinions as to its existence on a large scale, and the Newcastle Association of Engineers may be surprised to learn that one of the largest flour-mills in England has just been erected in Newcastle with German-made machines. Our readers are aware that during the last four years a great revolution has taken place in the flour-mill industry of the United Kingdom, and the old-fashioned millstone system has been almost entirely superseded by the new roller system. It is understood that during the last three years something like £3,000,000 sterling have been expended by the millers of the United Kingdom in having their mills transformed from the old to the new system, and of that large sum at least £1,500,000 have gone into the pockets of German and American engineers, even at a time when the engineering trades of this country were in a very stagnant state. The improved mills of Glasgow and Liverpool are to a large extent filled with German made machines, while the trade in wheat-cleaning machinery is almost entirely supplied by Germans and Americans. This state of matters is not due to the inability of British engineers to turn out a class of machines equal to the superior machines manufactured in all branches of engineering, but is largely owing to the fact that the German machines are of a less substantial description, rougher in finish, and consequently lower in price than the home-made machines. We believe the mills of a large number of the best-known British millers have been fitted up with machines of British manufacture, but we understand, that, almost without exception, the mills owned by limited companies and co-operative societies have been remodelled from the old to the new system by German and American engineers. This might be accounted for by the fact that the managing boards of such bodies are not composed of practical millers like the members of private firms, and therefore they decide to entrust their orders to the cheapest maker, irrespective of the numerous points which would not be overlooked by practical men; and the fact that the trade of the limited and co-operative companies has been placed almost exclusively with the German and Americans, while our home manufacturers have had to be satisfied with the work entrusted to them by private firms, is the most striking proof to us, if such were needed, of the superior design and more substantial construction of British-made machines. During the years 1882, 1883, and 1884 the imports of manufactured goods into this country increased from 6 to 8 per cent of the total imports, and this increase is almost equal to the additional imports of German and American milling machines. During 1885 the imports of manufactured goods declined about £90,000, and this decline is partly traceable to the falling-off in the imports of American milling machines. The Germans, who are represented in this country by four milling engineering firms, still do a pretty large portion of the business; but as one or two of the firms are understood to have made arrangements to get part of their machinery made by English engineers, the German imports may also be expected to show signs of contraction, and we may reasonably expect that the excellent home-made machines will ultimately drive the German ones out of our markets. While our engineering societies have been devoting attention to the imports of German steel castings and Belgian girders, both of which are comparatively small items in the quantity of our total imports, the enormous imports of milling machinery appear to have escaped their notice, and we are sure it is only necessary to lay the matter before them to ensure that the remedy will be quickly forthcoming.

ITEMS OF INTEREST.

OILING WOOD.—Wagon makers or repairers can save their stock from worms by oiling with linseed oil. Singletrees, doubletrees, neck-yokes, spokes and cross-bars that are of white hickory and are kept in stock for a year or more will be eaten by worms if not kept in a dark place or otherwise protected. Coal and kerosene oil are good also, and the expense of applying is but little. Linseed oil is preferable, as it acts to some extent as a wood filler, filling the pores and thus aiding the painting which follows in its proper place. A boy can take a rag dipped in the oil and go over a large number of pieces in a day's time, or a vat can be used long enough to admit of several dozen at a time, and put where they can drip for one or two minutes. The expense of this is much less than those who have not had the experience might imagine, and far less than the loss of stock by worms. Some manufactures oil all their white hickory stock before shipping.

THE STRENGTH OF GRANITE.—While tests have been made to ascertain the resistance of granite to pressure, too much dependence must not be placed on results given in text-books. Granite has a clevage the same as sandstones, although this opinion would be condemned by the orthodox geologist, as it touches on the theory of granite being an igneous and not an aqueous rock. I mention this but to reiterate what I have before asserted as to sandstone, namely, that to use granite so as to get the greatest resistance pressure, the stone should be used so that the force should be at right angles to the cleavage or bedway of the materials. Granite, like sandstone, laid upon its natural bed will increase in strength in the ratio of its superficies. However, if granite is fairly bedded on an equal and resisting foundation, no load can in ordinary circumstances crush it. It may be safe enough, in dealing with granite, to take from 684 to 848 per square foot as a fair test of its strength.—*James Gowans.*

STEAM PIPES are dangerous.—The engineer of the city of Quebec bears the following testimony in the *Scientific American.*—

"I am of opnion, from practical experience, that hot water pipes in contact with woodwork are dangerous, and I only wonder that insurance companies do not refuse to insure where the necessary precautions are not taken to isolate pipes sufficiently to prevent danger, which, as I shall presently show, it is easy to do. During soft weather steam and hot water pipes become very hot from the surrounding air being too warm to relieve them of or abstract their heat as colder air does. On one occasion this winter, a very soft day, my steam boiler had raised the temperature throughout all the pipes about the house to such a scorching heat that everywhere the woodwork was very hot, and I could not bear my hand on any portion of it without burning it as if I held it on a hot stove. It is only two or three weeks ago that a towel laid across the coil in a room on the third floor of the house was actually scorched as if by a red-hot iron. and this has happened more than once. True, water heated under atmospheric pressure only attains to a heat of 212° F. or 100° C.; but in a five story house, even with an open well or cistern in the garret above, a height, say, of fifty feet, equal to a pressure per square inch of nearly twenty-two pounds, the water of course reaches a much higher temperature, as it does in any closed vessel; and if to this be added the additional pressure or resistance in the rising mains due to the retarding by friction through long stretches of pipe with numerous right-angled bends, it is easy to understand how the temperature required to force the column of water along may be increased so as to become exceedingly dangerous."

A well-posted railway man says that the obligatory tooting of a locomotive on the New York, New Haven and Hartford Railroad in an ordinary day's run involves a waste of steam requiring the consumption of 280 pounds of coal to renew. He estimates the whistling expenses of that particular railway at $15,000 per year. There is a similar waste in the blowing of the whistles of stationary and steamboat engines. It is a matter worth the serious study of practical railroad men whether they cannot devise a cheaper noise with which to give notice of the approach of trains to stations and grade crossings.

RYE MILLING.—A new process of rye milling has been recently described by the Hamburg *Correspondent.* In this new method the rye is cleaned from sand, etc., slightly moistened, and then the grains are fed into a shelling machine. The friction, under pressure of the rye grains with each other, loosens the outer husk, and after shelling, the rye is brought under an "aspirator," which blows out the moistened woody fibre, and exposes it for a short time to a strong air current that extracts its humidity, and thus after the milling process, lasting only eight minutes, the rye is dryer than at first. It is said that by this method the separation of the kernel is effected; the bran is greatly reduced, while there is practically a reduction in the proteine. Bread made from rye thus treated is said to be lighter and more digestible.

AN UNEXPECTED RESULT.—Nature offers very little encouragement in California. A wide river in Colusa county was recently bridged by a one-hundred-and-seventy-five-thousand-dollar span, which was no sooner completed than the stream split in the centre, and now flows at either end of the structure, which extends over an island in the middle of the water.

MILL BRANDS.*

Amongst other matters discussed but not concluded at a previous convention, that of a national law requiring each package of flour to bear the maker's name and location, seems worthy of further consideration.

Such a law should not be necessary to millers. They should be proud to display their names and addresses conspicuously on each package, as the most efficient possible advertising. But from various causes, partly beyond the miller's control, probably more than half of the flour made in the whole country leaves the mill unbranded, or under special or fictitious brands, not identifying the maker. Doubtless, millers generally would prefer to sell their product under their own brands, but with a capacity to manufacture, greatly exceeding domestic demand, the competition has been so great that the buyers have been able to dictate whether and how flour shall be branded.

Sales of unbranded or special private brands cannot make either reputation or permanent customers for the miller.

The buyer using his own brands instead of those of the mill, can and does shade the quality to meet competition, unless the miller will lower the prices. After furnishing the first few lots, upon which the buyer makes a good introduction of a new brand, he is offered slightly cheaper flour, perhaps from a different section, when, if the first seller who started the brand cannot come down he loses the trade, and the process is continued, until finally perhaps three or more mills, widely separated, are competing to furnish the same brand of flour, and the trade is worth nothing to any of them; contributing thereby to a general demoralization of prices; and, worse yet, perhaps when the special brand is first put on the market, it may be truly represented as the standard flour of some well known mill, the reputation of which helps to give the brand a start; then after a while the buyer meets closer competition from flour a shade cheaper, which looks well, but which may decidedly lack the working qualities of the standard, when he requires the originator of the brand to reduce his price, or lose the orders. It may be impossible for him to do this and maintain his standard, when the buyer takes the cheaper flour from somewhere else and continues to float it on the reputation of or given to it by the original maker.

It fails to suit the trade as well, and the word passes around to other buyers that "So and So's" flour has let down, thus inflicting further damage to the first miller identified the brand.

By fictitious branding practiced by dealers who *require* their purchasers unbranded; and by millers who feel compelled to brand as ordered by buyers, both millers and consumers are defrauded. All farming communities producing good wheat are interesting in correcting this abuse. If Minneapolis flour can be made by simply using that deservedly favorite name, regardless of the special wheat which gives that flour its *distinctive* merit, or if St. Louis flour can be made by a stencil and paint brush, or a paper label, which practice certainly helps to prevent the wheat required for the genuine Minneapolis and St. Louis flour from bringing as high a price as it would, it certainly casts a shadow on the flours from these milling centers, the reputation for which, perhaps, it has taken many years to establish. Even for that in *looks*, *face*, and perhaps *dough* equal the product of the mills of these cities and vicinities, will not give satisfaction to dealers and bakers who have used the legitimate out-turn of these mills, and unknowingly do incalculable damage to the "honest miller' of these cities.

Let each great milling section of the country stand on its own merits, and *develop* increased excellence in manufacture and encourage the former to raise the crop best adapted to each, and there will be no occasion to borrow, without leave, the name of any other.

The manufacturer of any food product should not be ashamed to stamp his name and address thereon, and the final buyer, the consumer, has the right to know the name and location of the manufacturer or his daily food and to hold him responsible for its purity and quality.

A law requiring the name and address of the manufacturer of food products to be stamped or marked on each package, is needed for the common protection of manufacturer and consumer, and where any deteriorating mixtures or substitutes are used, such as glucose in syrup or sugar, lard, tallow, or cotton seed oil, in butter or other food products, if they cannot be prohibited or taxed out of market, the constituents and proportions of same should be plainly and truthfully set forth on each package, under severe penalty.

The stomach of the nation is close to its conscience, and should not stand any deterioration of its daily bread and butter.

We should invite the co-operation of the Dairy interest for the passage of such a law. That interest is our customer for mill feed, and this important element in the cost of our flour would bring a good deal more money, if the vile compounds, sold for substitutes for genuine butter were prohibited or branded.

Concluding this too hasty consideration of this important subject, I offer the following resolutions:

First, That the Secretary of the Association shall have a bill prepared to be introduced in Congress as early as possible, embracing the matter under discussion, and that he send a form of petition favoring the passage of such bill to some miller in every city or town represented in the Association, whom he will request to procure as many *signatures* to the same as possible, and

Secondly, That a memorial, setting forth the necessity and justice of such measure be prepared, printed and mailed to each Senator and Member of the House at Washington, and

Thirdly, That a committee of five be appointed to go to Washington after the matter shall have been referred to its appropriate committee, to urge its passage.

The resolutions were adopted.

*A paper read by Alex. H. Smith, of St. Louis, Mo., before the Millers' National Association in Chicago, May 13, 1886.

RAILROAD COMPANY—EXEMPTION FROM TAXATION—ELEVATORS.—The Illinois Central Railroad Company in 1881 erected on its right of way in Cairo, and near the Ohio river, a grain elevator at a cost of $200,000 or $300,000, and leased the same to private parties who received tolls and compensation for all grain stored therein. It appeared that such elevator was quite convenient and beneficial to the company in its business, but not more so than if built and owned by private persons. The Supreme Court of Illinois held (The People ex rel. Auditor of Public Accounts vs. The Illinois Central Railroad Company) that under the company's charter such elevator was not exempt from taxation, it not being devoted exclusively to the business of the company as a common carrier and not being essential to the operation of its road. The court held, however, that if an elevator of the company were used exclusively by it in receiving grain for shipment or for storing it after shipment without any additional charge therefor, except on neglect of the owner to take it away within a reasonable time after its arrival, it would be clearly exempt under the charter of the company.—*Bradstreets.*

RAILWAY MILEAGE OF CANADA.—Underneath this will be found a statement of the mileage of the various railways of Canada in operation on the first of January this year, as near as can be ascertained. With few, if any, exceptions, the roads are all standard gauges. As will be seen, the mileage will compare favorably with that of any other country in the world, considering the difference in population. The names of the roads are arranged in alphabetical order and are as follows:

	MILES.
Albert Railway N. B	45
Bay of Quinte Railway Navigation C	15
Canada Atlantic Railway	135
Canada Pacific Rai way	3678
Carillon & Grenville	13
Central Ontario	104
Chatham Railway, N B	9
Cobourg, Peterboro & Marmora Railway	15
Cumberland Railways, N. S	32
Eastern Extension Railway	80
Elgin, Petitcodiac, & Havilock Railway	14
Erie & Huron Railway	36
Grand Southern Railway, N. B	82
Grand Trunk Railway	2694
Intercolonial Railway	830
International Railway, Quebec	69
Kingston & Pembroke Railway	61
Manitoba & Northwestern Railway	130
Michigan Central, Canada Southern D.v	376
Napanee, Tamworth & Quebec	28
New Brunswick Railway	397
Nort ern & Northwestern Railway	382
P. ince Edward Island Railway	196
Quebec & Lake St. John Railway	46
Quebec Central Railway	148
St. Martins & Upham, N. B	30
South Eastern	185
Western Counties Railway, N. B	67
Windsor & Annapolis Railway	130
Total	10,027

In addition to these roads in operation there is a considerable mileage on which track has been laid, and which will be open for traffic in the course of a few months, and there will be, undoubtedly, at least 11,000 miles of railway in operation in Canada by the first of July 1886.—*Railway Life.*

A young gentleman was accusing the other of having a big mouth, "yes" replied the other, "but the Lord had to make yours small, so as to give you plenty of cheek."

SOLILOQUY of an inebriate, addressed to his hat which had fallen off. "If I pick you up, I fall; If I fall you will not pick me up—then I leave you;" and he proudly straggered away.

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Now is your time to send in your subscriptions for milling papers and other periodicals. Read our Club List on another page.

ACCORDING to the report of the Bureau of Statistics, there was exported during the month of March, 3,801,339 bush. of wheat and 569,437 bbls. of flour, showing an increase of 159,200 bush. of wheat and a decrease of 236,093 bbls. of flour for the same period in 1885. For the three months ending with March 31st 1886, there was exported 12,878,254 bush. of wheat and 1,732,979 bbls. of flour, showing a decrease of 6,435,797 bush. of wheat and 1,084,380 bbls. of flour from same period 1885.

We will send The Milling World (weekly) and the U. S. Miller for one year for $2.00.

ANTON KUFEKE'S latest London circular says:

There is a decided improvement in wheat this week, mainly caused by higher quotations from America, and the substantial reduction in the visible supply. There are not wanting causes for improvement on this side also, as arrivals are exceedingly small, and Indian wheats have now nearly disappeared from the market.

A considerable business has been done in flour, and the values of lower grades continue to improve, though buyers resist to the uttermost. Many of them have, however, been compelled to supply themselves at prices fully 2s. advanced from the lowest.

Higher grades, on the other hand, are somewhat cheaper, and meet with but little demand.

MINNESOTAS are so irregular as to be scarcely quotable, and WINTER WHEAT flours are to be had at 6d. less money.

CALIFORNIAN flours are attracting much more attention and are exceedingly good value at current prices.

The arrivals of wheat and flour are only 181,692 qrs., making the total of imports from Sept. 1st to April 17th, 9,497,988 qrs.

We will send the U. S. Miller and American Miller for one year for $1.50.

PROCEEDINGS OF THE MILLERS' NATIONAL ASSOCIATION.

The convention of the Millers' National Association met at the Grand Pacific, May 12. Vice President C. H. Seybt, of Highland Ill., presiding. The minutes of the last convention were read and adopted, after which a committee was appointed to draw up a ticket of nominations for officers for the ensuing year. A committee was also appointed to act in conjunction with the executive committee concerning the Downton claims, after which the convention adjourned until 2 P. M.

The afternoon proceedings were opened with the reading of the report of Secretary Seamans, of Milwaukee. The report showed the association to be in a very healthy and prosperous condition. He reported that innumerable patents of milling appliances of greater or less practicability had been inspected and disposed of, mostly without any special attention. The report of the treasurer showed that there was a neat balance of $2,835 on hand after paying all bills. In the report, however, there was an item of $236, which had been paid out for traveling expenses for the New York members of the executive committee in attending meetings of that body which caused some discussion. Mr. George Bain, of St. Louis, said he didn't see why the New York delegation should have their bills paid when other delegations had not. Mr. Hines, of New York, said that he had sent in his bill because it was just and right, and he should not be expected to give his time and money for the welfare of the whole association. "Besides," said he, "nearly all you fellows have been getting passes and had no expenses except for hotels. We didn't catch on to any passes."

Chairman Seybt—Brains always get passes. You ought to have looked out for that.

Mr. Hines—Suppose we didn't have any brains. What then?

Mr. Seybt—Oh, in that case I don't suppose there'll be a fight over your bill.

The dialogue was perfectly good natured, and on motion of Mr. Bain it was ordered that in the future the traveling expenses of members of the executive committee to attend meetings be paid by the association when the bills are duly sent in and audited. The reading of papers on the milling interests was then called for. Mr. Seybt read a paper on "Flour Export." He first advocated the taking of great care by the millers to keep up the exportation of flour from this country, for its stoppage for any length of time or its flagging would mean the ruin of thousands of millers in all parts of the United States. The two great enemies of the millers in this country are the elevator men and the unlucky passion for speculation in their ranks, the latter being the more dangerous of the two. Care should be taken to ship abroad the best flour made from the best grain, for the foreign millers and dealers are ever on the alert to detect imperfections, ever so slight, in American flour, and are not slow to expose them for the capital they can make of it, and it is a grave mistake to imagine that the foreign markets will reach out for any sort of American flour that may be ground out.

Mr. C. M. Palmer, editor of *The Northwestern Miller*, of Minneapolis, read a paper on "The Economics of Milling," in which he dealt at considerable length on the present state of the flour trade. He suggested some means of cheapening wheat, getting reductions in freight, perfecting mill brands, and enlivening the wheat and bran markets. The paper set forth by some recent practical experiments that wheat bran is equal in volume as a food for fattening cattle to cornmeal.

Mr. A. B. Kellog, of Buffalo, read a paper on "Bolting Silk," a commodity that has become indispensable to the milling trade. He charged that the manufactures of the article in this country are and have been for years taking advantage of the situation among the millers, and have been charging them fabulous prices for the article, which the millers have been paying uncomplainingly. He called attention to the fact that the milling trade was not as brisk as it might be, that the profits throughout were small, and that in any event the margins would not permit of paying any such prices as are being paid for bolting silk. He advised the millers to demand a reduction in the price of the article at once.

After deciding to pay a visit to Jackson, Mich., the convention adjourned until 10 o'clock in the morning, of May 13.

SECOND DAY.

The Millers' National Convention was called to order for the second day at 10:10 A. M. at the Grand Pacific Hotel, by Vice-President Seybt. The committee on the alleged general infringements of the Downton roller patent reported a resolution recommending the reference of the whole question to the Sub-Executive Committee of the association. The Chairman advocated its adoption, assuring the convention that the Sub-Executive Committee was a committee of "fighting cocks." Mr. Sparks of Alton spoke emphatically on the subject, maintaining by illustrative arguments that the claims of infringement made by Mr. Downton were not only too numerous and sweeping to be entered into in detail, but also altogether absurd. The resolution was then unanimously adopted.

Mr. Paine of Missouri then offerred a resolution expressive of thanks to Mr. Christian, the President of the association, who was too ill to preside, and also reciting the association's appreciation of Mr. Christian's services and character. Several members spoke on the resolution and it was adopted without dissent. Mr. Ellis of Indiana reported a resolution relative to the numbering of bolting silks, and Mr. Smith of Illinois made a motion that all new members, whether representing new or old mills, admitted subject to the approval of the Sub-Executive Committee be taxed $5 per per unit for every thirty-five barrels capacity. Mr. Smith said that the purpose of his motion was to increase the membership of the association. The motion was passed.

A letter was then read from Mr. W. B. Washburn of Minneapolis, inviting the members of the convention to visit the Industrial Exposition to be held there from Aug. 23 to Oct. 2, of the present year.

Mr. Alex. H. Smith, of St. Louis, Mo. read a paper on "Mill Brands" which is reported elsewhere in this issue of the U. S. MILLER.

Mr. Smith was followed by the Second Vice-President, Mr. Homer Baldwin, of Youngstown, O., who read an interesting paper on

"Purification of Flour," in which he maintained the following three propositions:

1. That the commercial value of flour is fixed by its purity.

2. That so-called patent flour is pure.

3. That flours of equal purity are of equal value.

Following Mr. Baldwin came Mr. George T. Smith of Jackson, Mich., who read the following paper on centrifugal milling, illustrated by large framed diagrams.

GENTLEMEN: Your Committee of Arrangements have honored me by selecting me to read one of the series of papers, which form part of the programme for the present meeting, and have assigned to me the subject of the centrifugal system of bolting. For this compliment I desire to return thanks, and at the same time assure you that it is not my intention to tire you with a paper of undue length or by reference to unimportant details.

My endeavor will be to point out as briefly as possible the chief features in which the centrifugal is superior to other reels in its operation on the stock to be bolted, in the results produced, room occupied, power consumed, cost of machines for a given capacity, expense of placing and connecting them in the mill building, saving of silk surface and wear of cloth, and economy in operation as a complete system; leaving a fuller inquiry into this system of bolting and an examination of its practical operation to yourselves when you visit Jackson on Thursday, as I believe it is your unanimous intention to do. I have had the drawing at my right, which is a vertical cross section of our reel, showing an end view of the working parts, prepared to show the action of the machine; and it is a substantially correct representation of the interior of that reel as you will find it in operation.

And here let me explain that the centrifugal, as we are now building it, is a very different affair from the machine of that name with which I first became acquainted in England, several years ago. That centrifugal was very severe on both stock and silk, drove the material through the cloth by the direct action of beaters, did not bolt clear, ran heavily, and lacked durability. The centrifugal of to-day is exactly the reverse of its predecessor in every one of these features, as I shall try to show you later on.

Referring to the drawing: A A are the hinged elevators attached to the stay-rods of the reel frame for the purpose of carrying up the material as the cloth cylinder revolves, and delivering it to the spreaders or distributors, B B, on the upward moving side of the reel. As these elevators complete the discharge of their load they are arranged to drop automatically away from the silk, so that the material reaches the cloth behind them, and is not obstructed in its travel around the silk cylinder. C is the spider to which the distributors are bolted, and D the distributor or driving shaft. The silk reel makes one revolution to twelve of the distributor shaft, or about eighteen per minute.

In operation the material being bolted is carried up by the elevators and gradually discharged on to the distributors, which, by their centrifugal action, spread it evenly over the entire silk surface.

On the lower quarter of the upward moving side of the reel the bolting is effected somewhat as it would be in a round reel without the distributing cylinder; and the amount of work done on the section of cloth referred to would represent the entire bolting capacity of a round reel without distributors or elevators. From the center of the upper side of our reel, however, around over the top and nearly or quite to the centre at the bottom (this being the portion of the silk covering most directly exposed to the action of distributors), the amount of work done is larger in proportion to cloth surface in the ratio of, at least, two to one, than on the section first mentioned.

The distributors deliver the material to the silk at a very acute angle, the apex of which is in the direction in which the cloth is moving, so that the bolting is effected almost entirely through the sliding movement of the stock over the cloth, and not by the material being forced through the silk, as is the case with the common reel. An examination of the reel at work will show that the material travels at a much higher speed than the silk cylinder, and confirm the statement of the manner in which the bolting is accomplished.

Having thus described in a very general way the operation of the reel, we claim for it that it handles the stock much more gently and with less wear and flouring of the material than the common reel; that the capacity is many times greater on the same silk surface; that it requires very much less power to bolt a given amount of material; that it bolts clearer and gives a sharper flour, dryer and sharper middlings, and cleaner tailings; and that it is much easier on the silk.

It handles the stock more gently than a common reel because it appears from actual experiment that in a hexagon reel sixteen feet in length and running thirty per minute, the same material is carried nearly to the top of the reel and allowed to fall to the bottom —a distance of about twenty-two inches—400 times in its passage through the reel from head to tail; and as it requires three or four common reels to equal the capacity of a centrifugal with like silk surface, it follows that the stock would be carried up and dropped as described at least 1,200 times. The noise made by the stock in striking the silk as it falls from one side of a common reel to the other, can easily be heard a number of feet if the reel doors are removed, and this treatment is certainly the reverse of gentle; while in the centrifugal the stock slides down along the silk and no sound indicating the falling of the material in a body, or its striking the cloth can be detected, even by placing the ear inside the reel frame. The stock is finished much more rapidly and is consequently handled over very many less times. A very large size centrifugal—one having from four to six barrels capacity per hour—would have not more than ten feet length of conveyors. Common reels with like capacity would have at least forty feet of conveyors, and you all know the result of conveying flour ready for the packer, or middlings suitable to go to rolls or purifiers a long distance.

The capacity of the centrifugal is greater than the common reel because it bolts all the time on every square inch of cloth, while the common reel does not utilize more than one-fourth of the silk.

It requires less power because in one elevation of the stock in the cylinder four times as much bolting is effected as in the common reel, and the material therefore requires to be elevated only one-fourth as many times. In the common reel the weight of the material is all on one side, and driving it is something like turning an overshot wheel against the water, while in the centrifugal the friction and weight of the material on the downward moving side of the reel counterbalances to some extent the load being lifted on the opposite side. There is also the saving in distance the material has to be conveyed to get it to the desired spot, and the elevation from one reel to another, where four or more are used instead of one. In a mill using common reels the conveyors, elevators and reels would at all times be handling twice as much stock as in a centrifugal mill, and using additional power proportionately.

The centrifugal bolts clearer than the common reel, because in the last named the stock falling in a body a distance of nearly two feet forces whatever material may happen to strike first through the silk, and because the stock is handled over and over such a great number of times that the impurities are worn into dust as fine as the flour. The flour is sharper for the reason that the stock travels over only a comparatively small silk surface, and is treated so gently in the centrifugal; while in the common reel the length of silk traversed, the number of times it is elevated and let fall, and the distance it afterwards travels in conveyors and elevators, produces a fine dust which softens and darkens the flour.

The explanation given for the sharper flour produced by the centrifugal will apply in support of our claim that it gives sharper and dryer middlings and cleaner tailings.

It is easier on the silk for the reason that the wear is distributed evenly over the whole cloth surface, and that the material does not come in contact with the cloth severely, while in the common reel the whole load falls every moment a distant of nearly two feet, striking on the silk in the same place each time, and wearing it out rapidly at the point of contact while the remainder of the cloth is still good.

If these claims are substantiated by your own investigations I think you will have no difficulty in believing with me that such a machine is adapted for use as a complete bolting system.

In my description of the reel and its manner of operation I have, I think, said all that is necessary in regard to the following named points, to which I promised to confine myself in the beginning: The superiority of the centrifugal to other reels in its operation on the stock to be bolted, in the results produced, amount of power consumed, saving in wear of silk and in silk surface required for a given capacity.

It now remains to compare it with the common reel as regards room occupied, cost of machines, expense of placing and connecting them in the mill building and economy as a complete system.

From such mill plans as we have made for parties whom we supplied with full outfits of centrifugals and scalpers we find that the saving in room required for bolting machinery when a complete centrifugal system is used is about one-half. The saving in first cost of machines, including the difference in bolting silk, pulleys, shafting, gears, etc., etc., required to drive them is fully one-third. And the expense of placing and connecting centrifugals in the mill building, owing to the fact that they go to the purchaser complete and ready for the belt, is only a very small fraction of the cost of erecting common bolting chests.

In stating why the centrifugal bolting system is the most economical I shall be obliged to recapitulate to some extent what I have said about that machine separately, and under this head I may be permitted to mention saving of room, saving of power, saving in amount and wear of silk, the improvement in the flour and the closer finish.

The saving in the wear or flouring of stock by reason of its gentle treatment in centrifugals, the fewer number of times it is handled over and the less distance it travels in reels, conveyors and elevators is a feature, the importance of which can hardly be overestimated, as the flour dust resulting from this handling is unavoidably mixed with the flour, can not possibly be separated from it, and unquestionably damages it to a considerable extent.

In gradual reduction milling a great number of separations is an indispensable part of the system, each one involving the handling of a greater or less portion of the stock, according to the separations being made, and any means by which these separations can be effected with the least reduction of the stock is certainly worth your attention.

You are all aware of the fact that the common hexagon reel must be given a certain load to insure its doing good work. If too lightly loaded, its flour will be dark and specky, and if overloaded its tailings will be too rich. If the proper load can not be otherwise provided, it must be by a return, through long conveyors and elevators, the bad effect of which has already been mentioned. The centrifugal, on the other hand, bolts clear its whole length, and without much reference to how it is loaded. I shall show you centrifugals at Jackson from which we are drawing flour the entire length of the silk, the last slide being clearer and better dressed than the first on a common reel bolting same stock, and tailings absolutely dry, free from flour, and ready to go to rolls or purifiers.

From this action of the centrifugal, it follows that each separate grade of stock can be handled and finished by itself and there is no residue from the different classes of material accumulating towards the finish to be bunched in special reels, thereby increasing the proportion of inferior flour.

The cleanliness of the centrifugal mill is worthy of mention, and this I think is accounted for by the fact that the best class of material is used in the manufacture of the machines, that the lumber is thoroughly kiln-dried, and that being built, finished, and tested in the shop where there is every facility for giving the most careful attention to the details of their construction, they are dust-tight, and free from leakage. The expense of building the required number of such mammoth structures as the old-fashioned bolting chests, in the mill, giving them the finish, and employing the class of material and workmanship in their construction used in the centrifugal, would make them a luxury no miller could afford.

Flour bolted on centrifugals will take more water, is sharper and more granular, and even when made exclusively from soft Michigan wheat, has been pronounced a mixture of spring and winter by the best Boston experts.

I have said a good deal about the damage resulting from wear and flouring of stock through repeated handling in the dressing reels, and it is of course equally important to avoid loss from this cause in the scalpers. The drawing on the left is a full-sized vertical cross section of a scalper which we recommend for use in connection with the centrifugal. The advantages of the machine are: Very gently handling of the stock; large capacity, due to the serrated cylinder carrying over a considerable portion of the material, and discharging it against the silk on the downward-moving side of the reel; and comparatively little wear of the cloth, the stock not being allowed to fall on the silk, as in the common reel, and the wear being equally distributed. It is known as the Holt Inter-Elevator Bolt.

But I am trespassing on your good nature. I have already detained you much longer than I expected to do when I began the preparation of this paper, and in conclusion only beg to explain that our company are engaged in milling for the purpose of educating ourselves in the centrifugal bolting system, demonstrating its superiority, giving our managers the opportunity to make such improvements in our machines as may be suggested by seeing them daily in practical operation, and conducting constant experiments, which we try to have result to the benefit of our customers.

I shall hope to meet you one and all at Jackson on Friday, where you will have every opportunity to examine our works, and the Eldred mill, in which I am interested, and where I trust we may be able to entertain you much more to your pleasure and profit than I have done here.

Mr. Jonathan Mills of Cleveland followed with a very long paper on the dressing and rebolting of flour, which was interrupted towards its conclusion by the announcement of an invitation from the Chicago Board of Trade. The last paper was by Mr. Ranck of Indianapolis, on the milling of corn-meal.

Mr. C. M. Wicker of the Chicago Freight Bureau addressed the convention on the subject of flour sacks. The railroads, he said, had been compelled to give up for the time being the clause in the invoice "at the owners' risk except in case of wreck"; but he assured them that the question would soon arise again if millers did not adopt some uniform standard for the sacks. The roads were unwilling to receive inferior sacks and then enter into litigation to defend themselves against unjust claims for damages resulting from the persistent use of inferior material in sacks. The Chairman, on behalf of the Sub-Executive Committee, promised Mr. Wicker that the committee would carefully look into the matter with a view to meeting his views.

The Committee on Nominations reported: For President, Mr. John Crosby of Minnesota; for First Vice President, Mr. C. H. Seybt of Illinois; for Second Vice President, Mr. Homer Baldwin of Ohio. On motion, the Secretary cast the vote of the Convention for these three gentlemen, and they were accordingly declared elected. Mr. Crosby was conducted to the chair and made a brief address, after which the convention adjourned *sine die*.

NOTES.

About three hundred millers, milling engineers, mill furnishers and newspaper men left Chicago for Jackson, Mich., on the 4 P.M. and 9 P. M. trains, at the invitation of Mr. Geo. T. Smith of the Geo. T. Smith Middlings Purifier Co.

Among the roller mill manufacturers present were G. N. Bierce, Dayton, O.; David Mills, Dayton; W. W. Allis, Milwaukee; Henry Stanley, St. Louis; O. A. Pray, Minneapolis; W. P. Northway, Col. J. Silas Leas, and Capt. Bennett, Moline, Ill.

The following newspapers were represented at the convention: The UNITED STATES MILLER, Milwaukee, Wis.; *The American Miller*, *The Deutsche-Amerikanische Mueller;* and *The Miller* of Chicago, Ill.; *The North-western Miller*, Minneapolis, Minn.; *The Millstone*, Indianapolis, Ind; *The Modern Miller*, Kansas City, Mo.; *The Milling World* and *The Roller Mill*, Buffalo, N. Y.; and *The Southern Miller*, Nashville, Tenn.

Many familiar faces at former conventions were missed, and a great many new ones took their places.

The many friends of S. H. Seamans of Milwaukee, will be highly gratified to know that he has been re-elected to the position of Secretary and Treasurer. It would be difficult to find a man so eminently qualified to fill the place.

The familiar face of Hon. Geo. Bain of St. Louis, so many years president of the M. N. A. cheered the hearts of all convention goers.

J. J. Snouffer of Iowa was not there, but many of his friends were, who were disappointed in not seeing him.

Handsome Tom. Miller of St. Louis, and R. L. Downton, the persistent patentee, who is now prodding the millers, with a view to making them disgorge some of their hard-earned riches, were present.

John W. Hinton of Milwaukee, was present and was the center of an enthusiastic group of protectionists. We surmise he was looking for Bates, the Chicago free trader, but Bates was not visible. We saw his tracks, however.

Simeon Howes, Esq., the great manufacturer of grain-cleaning machinery at Silver Creek, N. Y., was present.

Joe. Karnes of Buffalo, N. Y., was busily engaged during the convention with exhibiting an automatic grain scale to interested millers.

A FIELD FOR INVENTORS.—The field for the invention of devices for reducing the losses by fire originating from several common causes is a vast one, and we know of no persons more familiar with the dangers to be guarded against or better qualified to do some useful and profitable thinking on this subject than fire insurance agents. Accordingly, in the hope that some of our readers may make themselves millionaires in this manner, we will proceed to recite a few specifications.

For every dollar of loss on the premises where a fire orginates, eighty cents of damage is inflicted through exposure upon contiguous property. Much the larger part of this loss is from external exposure. Wanted, a method to prevent buildings from taking fire from the outside.

Friction in machinery caused the destruction of one million of dollars worth of property in the United States last year. Wanted, a method of lubrication which will do away with inflammable oils.

Matches carelessly handled burned over a half million dollars worth of property in the United States last year. Wanted, a substitute for matches, or a safety match that is as good as its name.

Defective flues burned about two and three quarter millions of dollars worth of property. Wanted, a flue that cannot be defectively constructed.

Defective heating apparatus burned nearly half a million dollars worth of property. Wanted, a heating apparatus that cannot prove defective.

Electric wires and lights, a source of increasing danger, burned over a quarter million dollars worth of property. Wanted, a system of insulation which cannot prove faulty.

Explosions of kerosene lamps burned over one and one-half million dollars worth of property. Wanted, lamps and lanterns that cannot explode.

Lightning burned one and one-quarter million dollars worth of property. Wanted, a perfect lightning rod.

Sparks from locomotives and other sources burned two million dollars worth of property. Wanted, a spark arrestor of genuine merit, or stoves and furnaces in which combustion is more nearly perfect.

Gas jets burned one and one-quarter million dollars worth of property. Wanted, a device for preventing the contact of goods and curtains with open gas burners.

These are a few of the most necessary inventions. But others are needed also. For example, there is a demand for a cigar that will extinguish itself before it is thrown away, also a plan for paralyzing incendiaries as soon as they decide to wield the torch. Another required invention is an automatic contrivance to pillory tramps before they enter barns and granaries. Still one more device, perhaps the most necessary of all, should not be forgotten, namely, a device for inoculating careless property owners with the spirit of carefulness, or of trepanning their skulls with the sense of watchfulness.—*The Insurance Chronicle.*

PUBLICATIONS RECEIVED.

We have received the "Thirty-Seventh Annual Report of Pork Packing in the West, etc," by Chas. B. Murray, Esq., editor of The *Cincinnati Price Current*. Price 25 cents. It is invaluable to all interested in the pork trade. It is furnished free with the *Price Current*, a commercial journal of deep interest to all grain and provision dealers.

Decidedly unique and original is the little cycling scrapbook just issued by the Pope Mfg. Co. of Boston, Mass. Upon the covers are fac-similes of the covers or front pages of thirty-seven of the leading American publications, and inside are between two and three hundred newspaper clippings pertaining to the advantages of cycling. By an arrangement of tint and type, the selections have the appearance of genuine pasted scraps, which makes the book worth possessing as a curiosity. The book will be sent by mail to any one interested in cycling.

NONSENSE.

IF there ever is a time when a man feels as if he would like to creep into a knot-hole it is when he pulls out his clean white handkerchief in a crowded street car, only to discover that somehow, he has managed to put his wife's night-cap into his pocket and is flaunting it before the passengers.

A JEFFERSON CITY (Mo.) paper thus describes the process of becoming a Colonel in that State: "The rank of Colonel is not acquired anywhere on the face of the earth with so little exertion on the part of the applicant as here in Jefferson City. In St. Louis the applicant must acquire the title by the slow process of absorption—that is, he must associate with Colonels for a number of years, learn their habits and try to look like them as much as possible. This is very wearisome to impetuous young men, and when we come to consider the expenses incurred through 'setting up the drinks' and the long years of time wasted, it is not to be wondered that St. Louis has only twenty-five or thirty Colonels.

THE legal fraternity gets any amount of chaffing about the big fees that are charged by some of its members under aggravating circumstances. In a group up-town Gen. Casement of Ohio told how a West Virginia attorney had recently attempted to charge him $1,800 for filing a bill of $18,000 with a railroad receiver. Ex-Senator J. B. Chaffee said he could tell a larger tale than that: S. B. Elkins and himself were engaged some years ago in a controversy over some land in New Mexico. There was a difference between them and other parties which could have been compromised for $2,000. On the advice of four attorneys who were their counsel they refused to settle, and went to court. They got badly beaten in court and were presented by the four lawyers with bills aggregating $25,000. A Minnesota man remarked after hearing these stories that he knew of a case which outran all these: When he first went West he was engaged in a small way in farming. He raised among other things a litter of pigs. One of the shoats was stolen. He traced it to the domicile of a shiftless neighbor, and sued him for the value of the pig. Of course he hired an attorney. He got a verdict for $3. The lawyer sent him in a bill for a cool hundred. He said he thought it cheap—for the experience.—*N. Y. Tribune.*

YOUNG WIFE.—There is a gentleman in the parlor, dear, who wishes to see you."

He—"Do you know who it is?"

She—"You must forgive, dear, but that cough of yours has worried me so of late, and you take such poor care of your health, and—and O, if I were to lose you, my darling!" [Bursts into tears.]

He.—There, there, dear. Your fondness for me has inspired foolish and unnecessary fears. I'm all right; you musn't be alarmed. But I'll see the physician, of course, just to satisfy you. Is it Dr. Pellet?"

She—"N-no, it is not a doctor; it's a—a—life-insurance agent."—*Life.*

WIFE to husband.—You must send me home a barrel of flour. There isn't a spoonful in the house. Knight of Labor—Can't do it; no flour to be had. Wife.—Plenty at the grocer's. K. of L.—All under boycott for keeping open fifteen hours a day. Wife.—Go to the mills then. K. of L.—They're boycotted for buying wheat of farmers who work fourteen hours a day. Wife. Then patronize the feed store. K. of L.—Can't; he buys his flour at the boycotted mills. Wife.—Then what are we going to live on? K. of L.—Live on the boycott. What do you want with flour, any how? What's the matter with good, plain bread?

THE COMMUNISM OF INSURANCE.—Insurance is communism in the best and broadest sense; it is the great leveler, but it levels up instead of down. Obliterate insurance and the small traders would go to the wall, and only the strong, rich men who could stand the shock of fire would survive; the strong would grow stronger, the weak weaker, the rich richer, the poor poorer. Insurance prevents this; it says to rich and poor alike: "Pay me a small annual stipend, which you can easily afford to do, and if the disaster of fire comes to you I will set you on your feet again." Insurance permeates all society, it ramifies all business, it touches every interest, domestic, mercantile, financial, commercial and its touch is everywhere beneficent, preservative. There are at this moment over ten million fire insurance policies extant in the United States alone and they cover about fifteen billion of values. These figures are stupendous, not many men can think in millions, and as for billions they are mere names to most minds, the actual number required to make a billion being out of the grasp of the average man. Count silver dollars at the rate of three a second, eight hours per day, six days per week, and it will take thirty seven years to go through one billion! The breadth of the insurance mantle which covers all these values may be told in figures, but to be appreciated the mind must run through all the busy marts of commerce; go among the humming spindles of manufacture, pass into the ten thousands of homes, and take in the whole body of the industries, ambitions, and anxieties of the nation. Only a giant can cover such ground as this, and insurance is that giant; on its Atlantean shoulders it bears up the mishaps of a world, and with the fingers of a Fortunatus, scatters its impartial benefits. Over fifty million dollars of losses are paid in the United States by the fire insurance companies annually and through this great balance wheel the business equilibrium is maintained. The rich do not lose their wealth, and the poor do not reach poverty; but possible prosperity is everywhere held out to honest industry through the kindly communism of insurance.—*Insurance Monitor.*

ABOUT HAND FIRE GRENADES.

The statement that test fires, built by the grenade men for the purpose of showing the value of their hand grenades, would go out themselves without burning the wood if left alone, seems to have been pretty thoroughly confirmed at the annual meeting of the National Association of Fire Engineers held at Long Branch last Fall. The hand grenade men were all out in force and were to give a grand display of their ability to extinguish fires for the special delectation of the firemen present. They built a small wooden house and soaked it thoroughly with petroleum. Then they covered it with tar. So throughly was the little structure soaked with oil and tar that it dripped constantly, making the white sand under and around it black and greasy. Inside this little house the fire was built and the hand grenade men all stood around with bottles of liquid ready to put it out. The word when to begin throwing the grenades was to be given by a committee of Fire Commissioners who had been appointed at the request of the grenade men. The fire in the little house burned fiercely and the Commissioners watched it with the air of amused school boys. Still the fire burned and the word to put it out did not come. The grenade men began to get uneasy. They moved about restlessly with uplifted hands anxious to throw their little bottles. But still the word was not given. The fire began to burn lower now and presently it went out altogether and not a hand grenade had been thrown. The boards composing the structure were scarcely scorched. The tar and oil had been burnt off clean, but the boards were in good condition. The beach was lined with thousands of people that day, who sent up a tremendous shout of derision and the hand grenade men disappeared from the public gaze and were "seen no more at all." There were thirty-three patents on hand grenades in this country at that time and they were said to have all been represented at Long Branch that day, but judging from the crest-fallen appearance of some of the representatives as they silently left the beach, they were not particularly pleased with the result of the day's experiment.

MECHANICAL PROPERTIES OF CORK.—On Friday last Mr. William Anderson delivered a lecture at the Royal Institution "On New Applications of the Mechanical Properties of Cork to the Arts." The lecturer began by demonstrating experimentally that in solid substances no appreciable change of volume resulted from change of pressure; even india-rubber was shown to be extremely rigid. Cork, however, appeared to be a solitary exception to this law, being eminently capable of cubical compression, both from forces applied in opposite directions and from pressure from all sides, such as arose when the substance was immersed in water and subjected to hydraulic pressure. The cause of this anomalous and valuable property of cork was then investigated, and it was shown to arise from its peculiar structure, which rendered it, in many respects, more like a gas than a solid. Cork was composed exclusively of minute closed cells, the walls of which were readily permeated by gases, but were impervious to liquids. The cells were filled with air, which, when pressure was applied, yieded readily, and expanded again when the pressure was removed. The impermeability of the cells to liquids prevented cork from getting water-logged when exposed to such fluids in bottles and in the new applications devised by the lecturer; and this property, combined with permeability to gases, rendered cork superior to india-rubber in waterproof clothing, because it permitted transpiration while excluding the wet. Mr. Anderson next proceeded to explain some of the practical applications which he had made. The first was the substitution of cork for air in the air-vessels of water-raising machinery. This was illustrated by a hydraulic ram which worked a fountain about 10 ft. high in the lecture room. Another application was the storage of a portion of the energy of the recoil of guns and employing it for the purpose of running them out when ready for firing. The gun-carriage was very much like that commonly in use with hydraulic compressors, but the water in the cylinders was driven by the recoil into a vessel filled with cork, which was thus compressed. The cylinder was separated from the cork vessel by an automatic valve which prevented the reflux of the water. As soon as the gun was loaded a tap was opened, the cork was then free to expand and liberate the water back into the cylinder, so running out the gun. The lecturer pointed out that this method of using cork would allow of a gun a gun being run out up any incline. The system was peculiarly adapted for naval use, where inclined planes became inoperative in the event of the vessel having a list in the opposite direction. The lecture, which was profusely illustrated by means of diagrams and experiments, certainly placed cork in a new light before the scientific world, and indicated fresh and extensive fields for its use. —*Engineering* (London.)

THE BREAKING UP OF ICE IN RIVERS.—Many suggestions have been made from time to time for the artificial removal of ice from ports and rivers, so as to hasten the opening of navigation, but nothing very effectual appears to have been accomplished in this field. The proceedings of the Institution of Civil Engineers quote some particulars of what has been done in this direction in Holland. The first trials made on a larger scale took place in 1845, when gunpowder petards were used, but with little effect. In 1861, steamers were kept at work for the purpose of maintaining an open passage, but this effort was also crowned with poor success. In 1871 a combined attack was made on the ice by petards and steamers, and here again failure attended the enterprise. In 1876 the operations against the ice were of a most warlike character. Tugs with torpedoes, and two ironclad rams, made a concerted attack on the blockading force without raising the siege, the ice still manfully holding its own. Five years later petards of gunpowder and lithofracteur were used without success, and again in 1885 operations were resumed but without effect, so far as opening the navigation was concerned. The conclusion arrived at is that the most powerful means hitherto employed are of no avail excepting under the most favorable circumstances of weather, and then the natural course of events can only be hastened by a few days.—*Engineering* (London, Eng.).

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RECENT MILLING PATENTS.

The following list of Patents relating to milling interests, granted by the U. S. Patent Office during the past month, is specially reported by Stout & Underwood, Solicitors of Patents, 66 Wisconsin st., Milwaukee, Wis., who will send a copy of any patent named to any address for 50 cents :

ISSUE OF APRIL 6, 1886—No. 339,161—Roller grinding mill, W. D. Gray, Milwaukee, Wis.; No. 339,162—Roller grinding mill, W. D. Gray, Milwaukee, Wis.; No. 339,163—Roller grinding mill, W. D. Gray, Milwaukee, Wis.; No. 339,164—Roller grinding mill, W. D. Gray, Milwaukee, Wis.; No. 339,241—Roller grinding mill, F. Wegmann, Zurich, Switzerland.; No. 339,591—Flight tractor for screw conveyors for flour mills, C. H. Stevenson, Hastings, Minn.

ISSUE OF APRIL 13, 1886—No. 339,631—Grain separator, G. H. Ellsbury, Tower City, Dakota; No. 339,723—Flour bolt, F. G. Winkler, Zschopau, Germany; No. 339,874—Grain drier, L. Gathman, Chicago, Ill.; No. 339,824—Grain meter, W. H. Taylor, & Stockwell, Stanford, Conn.; No. 339,927—Roller mill, U. H. Odell, Dayton, Ohio; No. 339,939—Register for grain weighing machines etc., C. Seessle, New York, N. Y.; No 340,019,—Roller grinding mill, P. Van Gelder, Liverpool, Suurby Bridge, England.

ISSUE OF APRIL 20, 1886—No. 340,155—Method of cleaning wheat, E. Reist, Williamsville, N. Y.; No, 340,271—Grinding mill, C. Abeale, New York, N. Y.; No. 340,2:5—Grain separator, W. E. Howarth, St. Thomas, Canada; No. 340,446—Bolting reel, B. Kniffler, Cleveland, Ohio.

ISSUE OF APRIL 27, 1886—No. 340,752—Grain separator, J. Bachman, Stony Run, Pa.; No. 340,789—Feeding device for grinding mills, M. O. Kasson, Buffalo, N. Y.; No. 340,898—Feed regulator for roller mills, W. St. Mielcarek, Grand Rapids, Mich.

The appearance of the docks and harbor of Duluth, is being greatly improved by the large amount of work being done by the railroads terminating there. Appreciating the fact that the commerce of Duluth must greatly increase within the next five or ten years, railroad managers are making improvements to meet the wants of the future as well as the present.

A small grist mill owned by Shute & Behne near Logansville, Wis., was burned April 28. Insured for $2,500. Mill said to be worth from $3,000 to $4,000.

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A Remarkable Coincidence.—While the new Furnace was in process of construction, the editors and publishers of Webster's Unabridged were engaged upon their new work which is as great an improvement upon all previous Dictionary productions, and just as valuable in its way as is the incredible fuel economizer above alluded to. Webster's Practical is not only a new compilation by the leading Dictionary House of the world, but it embodies several **new features** which, for ordinary use, render it pre-eminent among dictionaries—not excepting even the Unabridged.

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The following paragraph is reproduced from Webster's Practical.

Book, bŏŏk, *n.* A collection of sheets of paper, etc., bound together; a literary composition, written or printed; a subdivision of a literary work. (*Mer.*) A volume in which accounts are kept. — *v. t.* [BOOKED (bŏŏkt), BOOKING.] To enter, or register in a book. — **Book'ish**, *a.* Given to reading; more acquainted with books than with men. — **Book'-bind'er**, *n.* One who binds books. — **-bind'ery**, *n.* A place for binding, etc. — **-bind'ing**, *n.* Art or practice of, etc. — **-case**, *n.* A case with shelves for holding books. (*Bind.*) A book-cover. — **-cov'er**, *n.* (*Bind.*) A case for a book; a cover of cloth or other material prepared for casing a book. — **-keep'er**, *n.* One who keeps accounts. — **-keep'ing**, *n.* Art of recording mercantile transactions and keeping accounts. — **-learned**, -lĕrnd, *a.* Versed in books; ignorant of life. — **-learn'ing**, *n.* Learning acquired by reading,—esp. as opp. to practical knowledge. — **-mak'er**, *n.* One who writes and publishes books; a compiler; a sporting man who makes a record of bets. — **-mak'ing**, *n.* The practice of, etc.; compilation; systematized betting. — **-mark**, *n.* Something placed in a book by which to find a particular place. — **-plate**, *n.* A label indicating ownership, place in a library, etc., usually on the inside of the cover of a book. — **-post**, *n.* The post-office arrangement by which books are mailed. — **-sell'er**, *n.* One who sells books. — **-shelf**, *n.* A shelf to hold books. — **-shop**, **-stall**, **-store**, *n.* A place for selling books. — **-stand**, *n.* A stand for selling books in the streets; book-stall; a support to hold books. — **-worm**, *n.* A worm or mite that eats holes in books; one excessively addicted to study.

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PLEASANT PARAGRAPHS.

A TYPICAL "knight of the grip sack" was detained at a small town in Western New York awhile ago where a revival meeting was in progress. He had met a party of convivial friends during his stay there, and had what is popularly known as "a load on." Nevertheless he drifted into the revival meeting and took a seat well up in front. It was rather close in the church, and the warm air was conducive to sleep. The drummer yielded to the drowsy god and after nodding a little sank into a profound slumber and slept through the minister's rather long and dry discourse. The audience sang a hymn and the drummer slept on. Then the evangelist began his address, and wound up his fervid appeal with this request: "Will all of you who want to go to Heaven please rise?" Every one in the church except the sleepy drummer arose. When the evangelist asked them to be seated one of the brothers in the same pew as the sleeping drummer accidentally brushed against him as he sat down. The drummer rubbed his eyes, and, partially awake, heard the last portion of the evangelist's request, which was: "Now I want all of you who want to go to hell to stand up." The drummer struggled a little, leaned forward unsteadily and rose from his seat in a dazed sort of way. A sort of suppressed laugh he heard from some of the younger people, and an expression of horror he noticed on the faces of some of the older ones. Steadying himself against the rail, he looked at the evangelist an instant and then said: "Well, Parson, I don't know just exactly what we're voting on, but you and I seem to be in a hopeless minority."

HIS BRILLIANT PROSPECTS.—"So you want my daughter? Well, sir, what are your prospects in life? Have you any definite aim?"

"Aim? I should say I had. I am going to be an alderman one of these days."

"What makes you think so?"

"Why, it's a dead sure thing. I'm tending bar now, an' at the rate I'm knocking down I'll have a saloon of my own before next years election."—*Chicago News.*

WOMAN (to a tramp)—"If you'll shovel off the sidewalk, an' saw that pile of wood, an' pump a tub o' water, an' fill the wood box, I'll give ye a cold bite when you get through."

Tramp (sadly)—"Madam, if I were to put anything cold on my stomach after all that excercise I would have a fit of indigestion that would stagger the whole medical profession. I am not an ostrich, madam, nor an Englishman. Good morning."

REV. HENRY WARD BEECHER has been preaching a sermon to "Men Who Can Not Smile." We have not explicit information, but suppose it must refer to prohibitionists, but even in that case we think H. W. B. is mistaken.—*New Haven News.*

A GERMAN theorist has undertaken to make a microscope of sufficient power to make a bee's sting look like a telegraph pole. We have long wondered why something wasn't done to make that plaguy thing look somewhere near as large as it feels when it gets into a man's neck.—*Binghampton Republican.*

SOMETIMES I've asked everybody that never told a lie to stand up. Every fellow was looking around to see if anybody was goin' to get up. If anybody had a-got up I'd a-given him the floor and sat down.—*Sam Jones.*

A MAN said to me the other night: "Jones, I wouldn't have missed your sermon for $10," and yet when the plate was passed around that man put in a copper cent.—*Sam Jones.*

IN a contest between Sullivan, Ryan and an able-bodied pile-driver, it is believed that the country would come off first best.—*Detroit Tribune.*

JUST THE PLACE FOR HIM.—New York Journal: "Well, wife, I'm seriously thinking of moving to Bermuda."

"I'm glad to hear it. I know it will just suit you."

"Why, what do you know about it?"

"Oh, I've heard that a lazy man can make a fortune in Bermuda simply by sitting still and watching things grow."

SHE UNDERSTOOD THE JUDGE.—Judge Peterby came home not long ago pale as a ghost and trembling all over. "What's the matter?" asked his wife. "Mad dog bit me. In less than two weeks I'll be raving mad and snapping at everybody who comes near me." "Judge Peterby," said his wife calmly, "you can't work that little game on me. Ma is going to stay right here in the house and help me to take care of you," "I expect I'll go to Paris and be treated by Pasteur," said Peterby. "Ma and I will go along with you." Up to the time of going to press Peterby has developed no signs of hydrophobia, but to say that he is mad is no exaggeration whatever.—*Texas Siftings.*

A CRUEL DOCTOR.—"Look here, doctor, I don't want you to go to my house and frighten my wife as you did this morning."

"Frighten her? How did I frighten her?"

"Didn't she ask you what the symptons of hydrophobia are?"

"Yes."

"And didn't you tell her the patient always has a strong aversion to water?"

"Certainly."

"Yes; well, the poor woman is down sick with fright. She thinks I've got the hydrophobia."

POOR ENCOURAGEMENT.—"Come! step up and take something," said a reveler to a solemn-looking man. The latter shook his head.

"Come on. Brace up. My motto is 'Live and let live.' Never say die."

"You are one of those who want to break me up in business."

"What is your business."?

"Undertaker."*Texas Siftings.*

IF the young gentleman who is paying attentions to an H street belle will in the future not sit between the lamp and the window, the shadow pictures will not attract such assemblages as nightly gather in front of the residence, neither will he furnish food for comment for passengers in the street cars.—*Sacramento Record.*

THE snake that warmed itself at the farmer's fireside and afterward put his fangs into the farmer is believed to have been the first freetrader.—*The Judge.*

ONE of the brethren, who had a habit of moaning out "Oh-h, y-e-s!" at regular intervals during the service, was rather broken up on Sunday night. He had just wakened up when the preacher asked the solemn question: "Brother, do you intend to spend eternity in hell?" "O-h, y-e-s!" sang out the devoted brother.

"MOTHER, what is an angel?" "My dear, it is a little girl with wings, who flies." "But I heard papa telling the governess yesterday that she was an angel; will she fly?" "Yes, my dear, she will fly away the first thing tomorrow."

TO MUCH STYLE.—A prominent New York druggist is spending the winter in San Antonio, for his health.

"What mout your trade be, stranger?" asked the genial clerk of the local hotel.

"I am a pharmacist."

"A what did yer say?"

"A pharmacist."

"Why don't you talk English, and say you are a hoss doctor."

HIS PA WAS A RUNNER.—A Sunday school teacher was telling her children how the devil goeth about like a roaring lion seeking whom he may devour, and after the lesson was through she said that those who wished could ask questions. At once a little boy spoke up and asked how fast the devil could run. "Hush, Johnnie," said the teacher, "such question are very profane." "Well, I don't care," said Johnnie, "he can't outrun my pa anyhow, 'cause I heard pa tell a man down the street the other day that he caught the devil the night he came home from the lodge."

A GOOD ANECDOTE.—The following antecdote is told of Sir William Johnson:

"Do you know, sir," said Sir William angrily to a tenant with whom he differed on some agricultural question, "that I have been at two universities, and at two colleges in each university?"

"Naw," answered the farmer, "I did't know it. But, what of that? I had a calf that sucked two cows once, and I observed that the more he sucked the greater calf he grew."—*St. Louis Magazine.*

"PRISONER.," said his Honor, "the evidence is conflicting, but you were evidently drunk and I fine you $25."

"Thanks your Honor," replied the prisoner, "May I ask a favor of you?"

"What is it?" said the Judge, good-naturedly.

"I would like some tobacco before I go."

The Judge was taken aback, but said with a smile: "Do you prefer any particular kind?"

"Yes, your Honor," returned the prisoner with a grin. "I would like my fine cut."

His Honor saw the point and made it $10.—*Pittsburg Telegraph.*

A WOMAN in Bradford, Pa., while sewing a button on her husband's vest, was instantly killed by a lamp explosion. Still we think it is a woman's duty to sew bottons on her husbands vest.—*Norristown Herald.*

JUDGE ROBERT GRINDROD, the Little Rock Englishman who annually celebrates the birthday of the Queen, was recently summoned as a witness to testify in a case of hog stealing.

The 'am and the 'og was sold to me, your honor, and hafterwards when suspicion was hexcited, I noticed that a part of the 'air of the 'og was left on the 'am. Then we got the 'ide of the 'og and saw that the 'air on the 'am fitted into the 'ole of the 'ide."

The evidence was so conclusive that the thief was convicted.—*Arkansaw Traveler.*

CAN THE EDITOR TO IT?

Can he leave all his wrongs to the future, and carry his heart in his cheek?
Can he do an hour's work in a minute, and live upon sixpence a week?
Can he courteously talk to an equal, and browbeat an impudent dunce?
Can he keep things in apple-pie order and do half a dozen at once?
Can he press all the springs of knowledge with quick and reliable touch,
And be sure that he knows how *much* to know, and knows how to *not* know too much?

Does he know how to spur up all his virtues, and put a check rein on his pride?
Can he carry a gentleman's manners within a rhinoceros' hide?
Can he know all, and do all, and be all, with cheerfulness, courage and vim?
If so, we perhaps can be making an Editor "outen o' him!"
And 'tis thus with our noble profession, and thus it will ever be; still
Ther are some who appreciate its labors, and some who, perhaps, never will.

—*Will Carleton.*

SHORTAGE LIABILITIES DEFINED.

Judge Brown, of the United States District Court in Michican, a short time ago rendered a decision in the case of the schooner Lizzie A. Law, which will interest all grain dealers and carriers. Heretofore shippers have held the canal boat or vessel responsible for the amount of grain mentioned in the bill of lading, forcing the vessel to pay for all shortages. Judge Brown's decision does away with this practice, asserting that the vessel is not liable for differences provided the captain can prove that no grain was removed during transit. His decision is set forth in the following summary of the case.

In November, 1884, the schooner Lizzie A. Law took on board at Port Huron a cargo of wheat for Buffalo, and received two bills of lading amounting to the sum of 46,047 bushels. The second mate attended to the loading in of the wheat from the elevator at Port Huron, and with the weighman of the elevator tallied the separate bins as they went on board the schooner, and upon completing the lading the master received two bills of lading, signed by the defendants (but as to that no point is made) for this amount. The bills of lading contained the following somewhat extraordinary stipulation:

"It is agreed between the carriers, and shippers and assigns, that in consideration especially of the freight hereon named, the said carriers, having supervised the weighing of said cargo in board, hereby agree that this bill of lading shall be conclusive as between shippers and assigns, and carriers, as to the quantity of cargo to be delivered to consignees at the port of destination (except when grain is heated or heats in transit), and that they will deliver the full quantity hereon named, or pay for any part of the cargo not delivered at the current market price; the value hereof to be deducted from the freight money by consignees, if they shall so elect, and thereupon the carriers shall be subrogated to the shippers and owners' rights of property and action therefor." The address on the margin was as follows: "Order of J. E. & W. F. Botsford, New York. Notify David Dows & Co., care E. B. Wilbur & Co., Buffalo, for trans-shipment only, identity to be preserved."

The vessel proceeded to Buffalo with her cargo, where it was weighed out at the elevators, and, as it not unusual, there was an apparent shortage of some 496 bushels. The elevator at Buffalo conforming to a usage which it said to be well known, and indeed universal, deducted the value of these 496 bushels from the freight and paid the residue to the master of the vessel. This action is brought to recover the amount of this unpaid balance of freight.

It cannot be too well understood that a vessel has discharged her entire duty when she has delivered all she has received. This is not only the dictate of common sense, but it is also the law as laid down in Shepherd vs. Naylor, 5 Gray 591, and Kelly, Bowker, 11 Gray 428. So that, while the fact that the vessel did not tally as much at Buffalo as at Port Huron, cast upon the master the burden of proving that she delivered all she received, he fully satisfied this requirement, and hence, I think, is exonerated from liability in that particular. In this view it is not necessary for me to solve the question, which in its nature is insoluble, viz: whether the cargo was correctly weighed at Port Huron or at Buffalo. It is impossible for us to tell at this time where the mistake occurred. There was a mistake in measuring this cargo either in-board or out-board. If the mistake occurred at Buffalo, then the vessel is entitled to her freight upon the whole amount of bill of lading. If the mistake occured at Port Huron she is entitled to her freight upon the Buffalo weight. As this is all that is claimed in this case, I am not obliged to determine whether the mistake was at one point or the other.

In the above case of the schooner Freeman, it is said by the Supreme Court that the master has no more an apparent unlimited authority to sign bills of lading than he has to sign bills of the ship. See also Pollard vs. Vinton, 105 U. S. 7. His authority is to sign bills of lading of the usual tenor and description, consisting of a receipt for the amount shipped, subject to explanation, and a contract to deliver in the usual form at the port of destination. Such a contract the master has undoubtedly the right to sign, but he has no right to sign that contract before the cargo is laden on board. In this case there is no question of bona fide endorsement, and I think it is very clear that the stipulation, while it may perhaps bind the master personally, is not obligatory upon the vessel.

The libelant is entitled to a decree for the residue of his freight.

The following decision in a similar case a few weeks ago is exactly the reverse of this: The schoonor Montmorency arrived from Duluth with a cargo of 20,000 bushels of wheat taken on at elevator A. On unloading, an ordinary shortage, about 20 bushels, was found. She returned to Duluth for another cargo of 20,000, loading at the same elevator. After the last draught had been taken on the officers of the vessel declared that they had not received the full amount. The discrepancy between the water draught of the first and second loads was plainly to be seen. The captain, however, signed the bills, and when the cargo was unloaded here it was short 485 bushels. The consignee refused to pay freight unless the shortage was made good, which the agent refused to do. The matter was taken into court and Judge Wallace, at Auburn, gave a decision in favor of the consignee. The judge in this case held that the bill of lading was a contract and that the signature of the captain as master was binding on the vessel for the delivery of the full amount of grain.

FIRST STEAMSHIP TO CROSS THE ATLANTIC.

The first steam vessel to cross the Atlantic was the *Savannah*, 380 tons burden, ship-rigged, with horizontal engine and paddle wheels, built at Corlear's Hook, New York, by Messrs. Crocker & Fickitt, for a company of gentlemen who proposed to send her across the ocean for sale to the Emperor of Russia. Mr. Albert S. Bolles, in his *Industrial History of the United States*, gives the following interesting account of her history.

She sailed from New York City in 1819 for Savannah, Ga., making the trip in seven days, four of these under steam.

From Savannah she went direct to Liverpool making the voyage in twenty-two days, during fourteen of which she was under steam, making the rest of the time under sail. Her arrival in Great Britain created a great commotion. When about entering St. George's Channel, off the city of Cork, the commander of the British fleet, seeing a hugh cloud of smoke rising from the vessel and covering the sky, sent off two cutters immediately to save her passengers and crew from the destruction which he supposed was threatening them. The steamer paid no attention to the cutters, and the Englishmen, exasperated because their benevolence was not accepted, rode furiously alongside several times, and fired several guns accross the steamer's bow, and finally hove her to and boarded her. The officer, finding that the steamer was all right, finally let her go, and she bore away. At Liverpool her arrival created a tremendous sensation. As she came up the harbor with sails furled and the American colors flying the piers were thronged with people, who greeted the ship with enthusiastic cheers. A great many persons of distinction visited her. She finally went to St. Petersburg. She was an object of great curiosity at every port at which she touched, but was not sold as expected, and accordingly she set sail for home. The King of Sweden offered $100,000 for her, payable in hemp and iron delivered in the United States; but the cash was wanted, and the offer was not accepted. The ship ran home from Norway in twenty-two days. Her machinery was then taken out, and she became a sailer. She subsequently went ashore on Long Island, and was completely wrecked. The owners of the vessel are said to have lost $50,000 by the voyage to Europe. The trouble with the *Savannah* was that her engines were imperfect. They comsumed too much coal, and the ship could not carry enough fuel for a voyage, and there was no room whatever for cargo. It was about twenty years before the steam engine was so perfected as to make steam navigation profitable; and, when that time arrived, the English were the first to take advantage of it, the pioneer ships—the *Sirius* and the *Great Western*—entering New York harbor almost together on the 23d of April, 1838. The honor of the first crossing of the Atlantic remains with our own countrymen; but the credit of establishing vessels in trade belongs to the English. The first regular line of steamers—the Royal Mail, or Cunard steamers—began running in 1840, and have continued to run ever since. Other lines were successively established, until to-day the bulk of the world's carrying trade is carried in steam vessels.

CAUSES OF DECAY IN BRICK WALLS.*

The most powerful natural agent that disintegrates stone and other similar building material is undoubtedly water, especially when it freezes after it has entered into the interstices of the stone, as it then exerts a force that is irresistible. The evidence that water is the most destructive agent can be seen on any building where the exposed stone remains the longest in a wet state, as, for instance, the base of the wall near the ground, the stoops, the stonework *under* balconies, porticoes, window sills, etc.

But there are also other causes of decay, the chief one in my opinion, based on long and careful observation, being the white salts which are so often seen upon our best buildings, those of brick more particularly. They are especially ruinous to building materials, are most difficult to overcome, and hence deserve extended notice.

These salts exist naturally in the clay from which the bricks, terra cotta, etc., are made; also in the lime used for mortar or cement. It is a well-known fact that many of the salts that are present in clay are insoluble while the clay is in its raw or natural state, but that the action of fire renders them soluble. The same result also follows the admixture of lime with the clay. Hence, agriculturists apply lime to the clay soils to render them more fertile, because the salts are made soluble by the action of the lime, and the plants are then able to assimilate them.

These salts consist of carbonates, sulphates, nitrates, and carbonates of sodium, potassium, calcium, magnesium, etc. Sometimes several of these salts are associated in one sample taken from a building, and in nearly every instance that has come to my notice I have found a difference of constituents and proportions, so much depending upon the clay and how it is burned, and the character of the limestone used for the mortar or cement. Hence arise the apparently contradictory statements and opinions expressed by chemists and others as to what these salts are composed of, some claiming one thing and some another; and I have no doubt that each may have been correct in his analysis, though perhaps widely differing from the others. I have taken two samples from the same building and found them dissimilar. I believe that every kind of brick, cement, and mortar contains soluble saline ingredients.

This is wholly due to moisture, in the masonry. This dissolves the salts, forming a weak brine, which, upon coming to the surface, loses its water by evaporation, and leaves the salt to crystallize and form the objectionable efflorescence. The presence of the moisture may be due to the water used in mixing the mortar or cement, or wetting the bricks; or it may be absorbed from the rain falling against the walls. Hence the drier the walls are kept during the erection of a building (consistent with making the work good), the less chance will there be for the salts to show themselves; and if the walls can afterward be kept perfectly dry, the salts remain inert and do no harm, because water is the agent that renders them active and effective in their resolving powers. It may sometimes be seen which parts of a building were built in dry weather and which in wet, by the appearance of the mortar joints at different elevations, especially on old brick structures. The attempt to wash the salts off only results in their being dissolved and absorbed by the bricks, to reappear as the bricks dry. Rain does not wash them *off*, but *into* the surface of a building.

Salts of lime are produced by acids and alkalies contained in rain water, especially that falling in cities. Some twelve years ago an eminent English scientist estimated the quantity of sulphuorus-acid gas given off by the coal consumed in London as 300,000 tons annually. The carbonic acid gas from the same source must have been many times greater. These two gases have a great affinity for moisture, and are readily taken up by the rain which falls against and is absorbed by the brickwork, and are the most active agents in producing soluble salts of lime, and so causing it to dissolve, to appear afterward on the surface as previously described. Nitric acid, and also the alkali ammonia, act similarly. Their destructive effect on the mortar and cement joints is especially noticeable on the brickwork of the tops of chimneys that are in contact with the overflowing gases resulting from the fires beneath.

The alkaline property of some of these salts is very destructive to brick, stone, cement, and mortar, completely disintegrating them, as may be seen by careful examination of the places where they show; nor can linseed oil, paints, or similar composition withstand them, the oil being saponified by the alkali and rendered useless, so that the paint is destroyed and falls away I have seen these salts in the walls of buildings in England nearly 150 years old, still active and troublesome. In Philadelphia, on October 4, 1882, I noticed the peculiarly white appearance of a great number of the houses, and I asked if they had been whitewashed. I then learned that the whiteness was wholly due to an extraordinary quantity of these salts on the surface of the walls, caused by a three day's rainfall that had occurred a few days before, and had completely saturated the brick work, which upon drying out had produced the efflorescence. It by no means follows that the brick, cement, and lime severally are not good because they contain these salts, however undesirable these salts may be; in fact I have constantly observed them in the very best qualities of each.

Architects and builders are often blamed and held amenable for discolorations on buildings, and most unjustly so, when they are no more responsible for dirt settling upon and staining the walls, or for the salts that appear thereon, than are the shoemakers for our shoes getting soiled when we walk in a muddy street, or glaziers for our windows getting dirty from rain or dust.

Water will penetrate an ordinary brick; it will dissolve the salts in the walls; it will bring the same to the surface and evaporate, and leave the salts to crystallize. Dust will float in the air and settle on exposed surfaces, and, if rain can fall upon them, it will most assuredly penetrate and permanently stain them. These are natural causes and effects, and no one can be justly and reasonably blamed for such things happening.

About a year ago I was requested to examine a large new building in this city; the front was of a light yellow brick. The owner was moving his goods into it. It had become, as usual, stained, and the owner was retaining a part of the money, refusing to pay either architect or builder because of these stains. After a careful examination I told him that neither of them was responsible; that the front faced the north, had been very wet, vegetable germs had settled upon it and grown, and the rain had washed floating particles of dust into it, and that the architect and the builder ought to have their dues. I asked him if he had withheld payment from the glazier because his windows had become dirty. His reply was: "Well, I will take good care that *you* don't see those particles." I said: "You asked for my opinion on your building, and I have given you a true and honest one."

Terra cotta shows these salts very much, in some buildings even more than the brickwork. This is noticeable on the new Produce Exchange Building. It is there caused, probably, by the liberal, though, perhaps, necessary backing of cement or mortar used to fill up the hollow spaces behind it, the salts of which come to the surface as before described.

Stone, especially in contact with brick, is damaged by the same cause. The water, no matter how it reaches the cement or mortar in a wall, will permeate through a stone, and bring with it these destructive salts, which quickly eat away the surface.

*From a paper read before the New York Academy of Sciences by R. M. Whafall.

BOILER MAKING.

In regard to boiler making: "No matter what the quality of material," says a practical man in the *Iron Trade Review*, "it can be, and often is, injured in the process of manufacture by unskilled workmen. This is especially the case when the inferior qualities are used, as excessive labor in manipulation, strains the already weak material in an injurious manner. A stalwart, energetic calker can destroy the utility and safety of a boiler when poor material is used, by the vigor and number of his blows and keenness of the edge of his tools. Even in first-class material this can be done; hence the necessity of intrusting this branch of the business to men of intelligence and experience. So with the drift pin in the hands of the riveters; in poor material a fracture can be, and often is, produced with the grain of the material. Occasionally this is done across the grain; an exposure of the defect would also expose their ignorance and recklessness, resulting probably in their discharge; for this reason the use of tools to hide the defect is resorted to, and the matter (hidden from all eyes) may prove the initial cause of an appalling disaster."

It is proposed to celebrate on the 4th of March 1887, the fiftieth anniversary of the incorporation of Chicago. No city in the United States has attained to such a marvelous growth within the space of fifty years as that of Chicago in respect both of wealth and population. Founded on the site of old Fort Dearborn, on the southwestern shore of Lake Michigan, at a edge of a vast plain stretching far back into the interior, it had in 1837, when it was first incorporated, but 4,170 inhabitants. in 1880, the census reported the population at 503,185, and at the present time it is within the mark to compute it at 650,000.

CORNMEAL MILLING IN DIFFERENT SECTIONS.

The customs and habits of people in the different sections of the country have developed a prejudice for special kinds of cornmeal for special localities. In the southern country they require a very soft-ground meal, and are not particular about the quantity of bran they may grind into the meal. I recently constructed a mill in the South in which the offal did not exceed three pounds to the bushel, the bran in this case was very fine and white. The proprietor insisted that this bran should be ground up into meal. I afterward put in additional rolls for this purpose,and ground the entire product into meal, making no offal except the cleanings, which did not amount to one quarter of a pound to the bushel. In this mill we are making 55½ pounds of meal out of 56 pounds of corn.

The evaporation in roller meal milling is but trifling. The baking qualities of the meal were excellent, and in every respect gives perfect satisfac.ion to the class of trade that demands it throughout the southern country. In that country there is much more meal used than flour. The large planters buy it in large quantities and furnish it to their field hands. I think it is a question with them of weight rather than the quality of the meal, and as a result it is advisable for parties who are operating corn-meal mills at any point south of Chattanooga, Tenn., that they should put in a sufficient amount of rolls to reduce the entire product of corn to meal, at the same time arranging the mill in such a manner that 10, 15 or 20 per cent. of a high grade of meal may be drawn off to supply the better class of trade. In the south no class of meal can be sold except that made from white corn. In the northern country, and especially throughout Pennsylvania and Northern and Central Ohio and Northern New York, the education of the people demands a granulated meal, and the demand is almost equally divided between white and yellow meal, the yellow probably predominating to a certain extent. This is especially true in the more northern sections of the country.

In those sections the demands of the trade are for a high grade of granulated meal, and as a result the millers are not particular as to a close clean up. They are satisfied to get from 40 to 45 pounds of a high grade of meal to a bushel of corn, the offal going into feed which ordinarily brings a price a little in advance of the price of the unground corn, the high grade of granulated meal bringing a price much higher in proportion to the price of corn than it does in the southern country. In some sections of the New England States, and also through Virginia and North Carolina, a fine, soft-ground meal is demanded, similar to that made in the southern country, but they require a much more perfect dressing. It is a matter of considerable difficulty to arrange a mill so that it will suit the demands of the trade in all sections of the country. Th.s can be done, however, by using some surplus bolting capacity and grading the bolting surface in such a manner that the material may be drawn off at any stage of the bolting, thus obtarning a condition of granulation to suit the demand in the different sections.

It has often been remarked that soft meal could not be produced on rolls. This is a very great error. In order to produce soft meal it is only necessary to grind closer, or use finer corrugations, or if desired, to pass the meal, after it has been finished and bolted through fine scratch rolls and grind sufficiently close to produce the requisite softness and fineness of the material. In order to obtain a high grade of granulated cornmeal, the practice has been to first reduce the corn to hominy, and then to grind this hominy into pearl meal. The power required to operate the hominy mills is fully twice as much as it is to reduce the corn to meal on rolls. Furthermore, in the production of hominy there is a loss of never less than one-third of the weight of the corn in the shape of offal made on the hominy machines, which is scarcely ever anything better than feed or brewers' meal. In the use of rolls without a hominy mill a very much higher per cent. of granulated meal is made, and not to exceed one-third of the power used, while at the same time the break meal made on the rolls is of a quality decidedly superior to the ordinary stone-ground meal, consequently it is preferable to abandon the use of a hominy mill in the production of granulated cornmeal.

In my experience I have found that to produce a high grade of granulated cornmeal without the use of a hominy mill it is necessary to use instead of reels, shaking riddles, provided with suitable aspirating devices for the purpose of thoroughly purifying the grits, otherwise results cannot be made equal to the old system of pearling the corn.

Our company has erected not less than 30 complete cornmeal mills within the last four months and most of these mills have been on our short system, in which we have used only one doubl · set of rolls and one of our combined aspirating and separating machines for producing the entire product. The results have been most satisfactory in all cases. The pearl meal is in no manner inferior to that made by Schumacher, of Akron, upon a more elaborate system, and invariably brings a high price in the market. It is the op'nion of the writer that in many of the small mills, where they have a limited amount of power, and are not justified in putting in engines and reconstructing their flour mills to the roller system, they could do a profitable business by putting in this short system of cornmeal milling, making a high grade of meal, and mixing the offal with corn and oats for the production of a standard grade of feed. In this class of milling there can be no possible danger of loss, in view of the fact that the meal always brings an advance over the cost of the corn, and the feed never below that cost. There is quite a demand among brewers for a high grade of granulated meal, which is being used quite extensively as a substitute for malt.

There is one important fact connected with granulated pearl meal, and that is it is scarcely necessary to use a dryer upon it, unless it should be upon quite damp corn, or in case of foreign shipment, the germ being entirely eliminated and the meal being so granular that the air circulates freely through it, so there is scarcely any danger of fermentation. It is the sugar contained in the germ which causes the souring of meal. Nine-tenths of the mills we have built for cornmeal have used no dryers. They have been operated in the South in the hottest parts of the season, upon corn frequently not perfectly dry, and we have never yet known of an instance where a sack of meal has soured or spoiled by fermentation, except in one case, where the germ and bran were ground up with the meal. A pure granular meal will not ferment much, if any more easily than flour.—*By J. M. Case, of Columbus, O.*

BRITISH IMPORTS OF WHEAT FROM INDIA AND THE UNITED STATES.

"For some months past," says the London *Economist*, our imports from India have enormously increased, while those from the United States have decreased to a great extent. In fact, so much progress have these two movements made that, if continued, they will before long displace the latter country althogether from its dominant position as a supplier of wheat to this market. In the six months ending March 31 we imported from India 7,486,000 cwts of wheat, as against only 4,024,000 cwts in the same period of the preceding year; while our imports from America were only 5,934,000 cwts, against 10,264,000 cwts. This is shown month by month by the following figures:

IMPORTS OF WHEAT INTO ENGLAND.

	From United States		From British India.	
	1885-86.	1884-85.	1885-86.	1884-85.
	Cwts.	Cwts.	Cwts.	Cwts.
March	2,217,000	1,995,000	746,000	598,000
February	792,000	2,485,000	1,043,000	452 000
January	520,000	2,567,000	1,452,000	681,000
December	734,000	1,408,000	1 827,000	701,600
November	480,000	774.000	1,101,000	711,000
October	1,191,000	1,035,000	1,317,000	881,000
	5,934,000	10,264,000	7,486,000	4,024,000

"Of course in addition to wheat, America sends us much flour, but this has also fallen off heavily, our imports in the past six months having been only 6,140,000 cwts, as against 4,478,000 cwts. India at present does not export flour to this country. There are, of course, several reasons to account for the changes we have indicated. Amongst other things, the exports from India have undoubtedly been stimulated by a fall of, say 2¼ per cent. since October in the value of the rupee as measured in gold. And on the other hand, the American exports have been restricted by speculation for the rise at Chicago, which has kept prices at an artificially high level, and by an advance in railway rates from the West to the seaboard. But there is one influence that is exercising an effect that is sure to increase, and to prove permanent We refer to the continued and rapid growth of the system of roller milling. By this system the hard Indian wheats can be used to form an excellent "bottom wheat," which was not the case under the old system, when American wheat was chiefly used for that purpose. And, in fact, the very qualities, that acted to the detriment of Indian wheat a few years ago, viz., its extreme dryness and hardness, are now, under the new system, which will soon be almost universal for large operations, decided factors in its favor."

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Husband—Yes, I hope we shan't have a visit from the burglars, but if they come—By Heaven, Maria, if I didn't forget to call at the gunshop for my pistol to-night!

Wife—Oh, Harry, what will we do if we are attacked in the night?

Husband—Have you got any more of that bread we had for supper?

Wife—Yes.

Husband—Bring me two loaves. I'd rather have them than a pistol.

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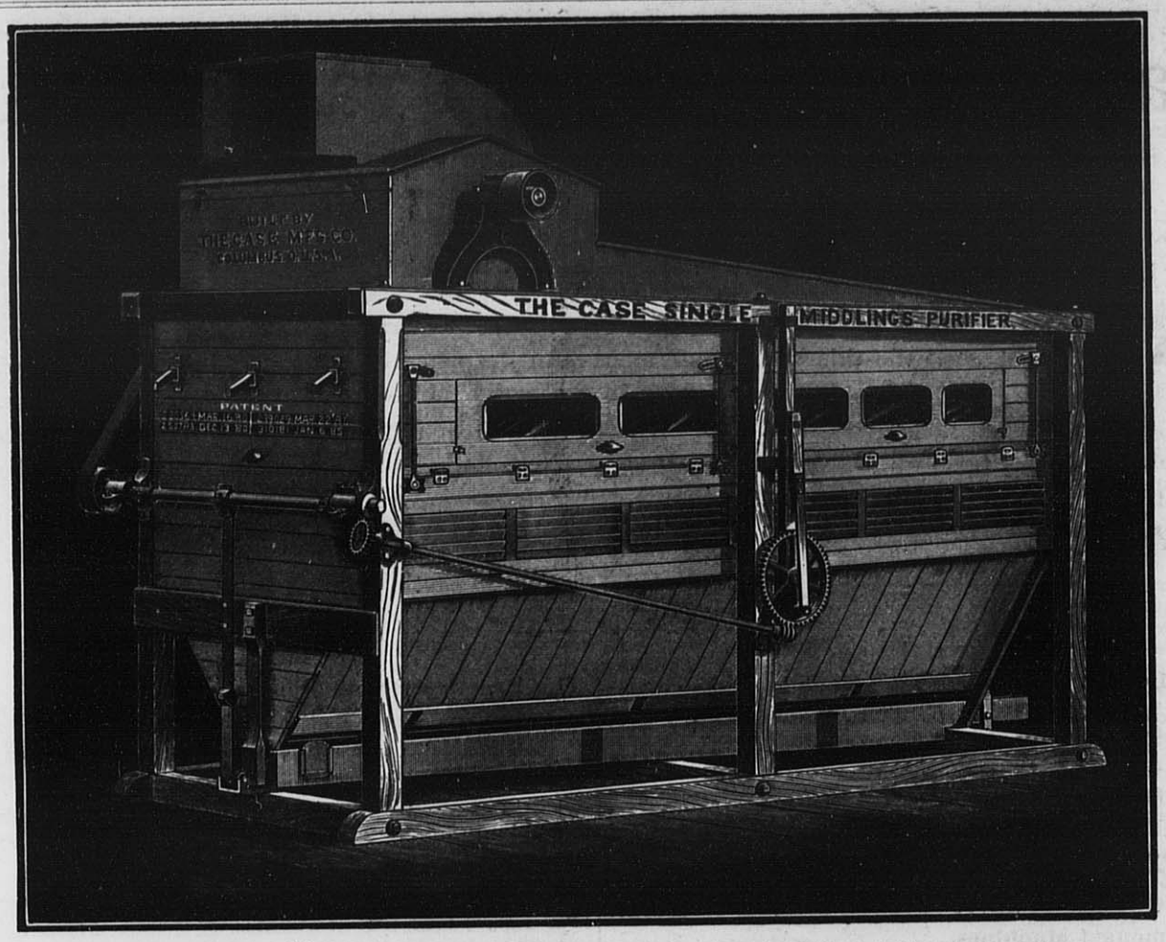

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